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THE MIGHTY MEDICINE

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THE MIGHTY MEDICINE

Superstition and Its Antidote:
A New Liberal Education

BY
FRANKLIN HENRY GIDDINGS

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1929

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Do you read books that you cannot understand easily? Books that require to be read slowly and deliberately? Books that you know are beyond your capacity to understand fully? If you do not, you are not educated; you have not the temper and habit of an educated mind; you are not a student.

Do people who fail to meet that test *think* they are educated? No. Such people do not think.

—Cassius J. Keyser,
Mole Philosophy and Other Essays.

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THE MIGHTY MEDICINE

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CHAPTER I

THE CONFLICT BETWEEN OCCULTISM AND MYSTERY-DISPELLING KNOWLEDGE

In 1894 I spoke a word of warning against optimistic confidence that the long struggle for liberty of teaching was then practically ended. I did not share a prevailing belief that arms were stacked and banners furled. Reasons for apprehension I found in an increasing control of education by unenlightened political masses, carrying with it a submission of questions about the validity and worth of knowledge to a majority vote under universal suffrage. "And that this subserviency of the high to the low will increase as the years go by," I added, "is the great danger that I fear from the further success of the social-democratic movement." [1]

Thirty-two years later, addressing an audience which included men from research laboratories of physics, chemistry, biology, and medicine, and representatives of the so-called liberal professions, I asked the question, "Can Education Humanize Civilization?" My answer was:

[1] Commencement address, Bryn Mawr College, June, 1894.

"Wealth per capita increases, but so also, we fear, do envy and bitterness. The growing splendour of our cities amazes, but the perils and discomforts of our thoroughfares multiply. We communicate instantaneously with near and far; we travel ever longer distances at accelerating velocities . . . but our nerves are worn, and insanity so encroaches upon sanity that alienists are asking if the whole race of man is predestined to madness. Scientific medicine, availing itself of chemistry and biology, has demonstrated the possibility of ridding the world of epidemic diseases and of many others, but we scorn its teachings to follow after ignoramuses and quacks. We have churches and schools, home and foreign missions, young men's and young women's Christian associations, colleges and universities; but we remain superstitious, afraid of knowledge, bigoted and intolerant, truculent, gun-toting and murderous." [2]

Why so? I did not attempt a detailed answer, but in a word, I indicated what I presumed to be the radical cause of failure.

"We believe in education. Our faith in it is as unquestioning as the faith of primitive man in magic. And why not? Is not education descended from magic in the direct male line? Is it not to this day a mystery? Do we not revere and practice it as a mystery, with much waving of wands and stirring of the witches' broth? Why then should we think ill

[2] Address of the Honorary Chancellor of Union University, at Schenectady, June, 1926.

of ourselves if we have expected education to work miracles? Have we not been brought up to expect as much? And why be discouraged if we discover that education has not achieved the impossible? Let us rather face our unreasonableness, and soberly set about the business of trying to attain the attainable."

The pith of these excerpts is an assumption that a stubborn conflict goes on between two irreconcilable conceptions and realities of education. One education is experimental. It is a child of intellectual courage. It is not afraid of any knowledge. It fights in defence of mystery-dispelling knowledge and of intellectual liberty. It fights also necessarily for its own survival in an unfriendly world. The other education is traditional and sacrosanct. It is authentic in the sense that it is vouched for by doctors of magic, heirs and assigns of the medicine man. It is a child of fear. It was born in the jungle and reared in the bush. It harks back to incantations and sorceries. Its curriculum, like that beaten into the small head of the wolf-reared man cub in Kipling's story of Mowgli, consists of "Master Words" of magical virtue. This education is arrogant and despotic. It crushes intellectual liberty when it can. It hates the scientific knowledge of nature with implacable hatred, for that knowledge exposes magic and discredits it.

By selections and eliminations traditional education has fashioned superstition, magic, and necromancy into occultism, which it conserves and prop-

agates. Experimental education proclaims and distributes "natural knowledge," [3] as necessary to human self-respect and happiness.

Occultism has a long lead and the adventitious strength of prestige. It is a vested interest, making common cause always with reaction and often with exploitation. It has dominated folk thought and mores. The collective sadism of witchcraft persecution was its supreme debauch. It tried accused men by ordeal, and sanctioned duelling as an appeal to divine judgment. It pronounced human slavery right because Canaan, a mythical ancestor of the negro race, had been cursed. It proclaimed and defended the divine right of kings until dumb masses, finding tongue, successfully defied their kings. Then occultism masquerading as reason assured them that the voice of the people was the voice of God. Now it preaches the mystical sacredness and magical efficacy of statute law.

The soul of occultism is *obsession by mystery*. The drive is fascination, a commingling of dread, curiosity, and appeal. The dread may be an uncontrollable fear; the appeal may be an irresistible tension, of desire or of amazement. Curiosity, divorced from dread and appeal, would enervate occultism by peering into mystery, and often learning too much about it.

Terror of the mysterious is superstition.

[3] The phrase has a history. The Royal Society of London for Improving Natural Knowledge was founded in 1662.

A forgotten genius, who lived in prehistoric Latium, one day made from *super* (over) and *stare* (to stand) a word which had the qualities of truth and tang. He had beheld a terrified countryman "rooted to the spot" by a harmless mystery. A modern reporter, proficient in what Mr. H. L. Mencken calls the American language, contemplating a like phenomenon would indite, "paralyzed!" Thereby, incidentally, perhaps unconsciously, he would give us a translation of *superstitiosus,* true to elemental meaning and piquant with the ancient tang.

Probably there is nothing in heaven above, on earth below, or in waters under the earth, that man has not stood under, on, or over, paralyzed with fear of what James T. Shotwell slangfully but accurately calls, "The un-understood".[4] The shadow-made eclipse and the tenuous comet have terrified more than head-hunting enemies. The raven has been more dreaded than cobra or rattler. Darkness has been a shuddering horror. Uncanny men and women have emitted malicious animal magnetism. Every happening not obtrusively familiar, has been ominous, and all because "un-understood"; all because of mystery.

Mystery is of three orders, not discriminated by occultism.

Mystery of the lowest order is casual. It occurs; it just happens to be. It is the mystery of the undis-

[4] *The Religious Revolution of To-day,* p. 112.

closed, of the not found out, but presumably discoverable. This is the mystery that we enjoy in the well-conceived detective story, that allures us in a compelling personality not wholly revealed.

Mystery of a higher order is adherent. Like a yellow fog it clings to the relationships and goings on which constitute the environmental world. It is dear to occultism because until dispersed by natural knowledge it can be exploited by practitioners of pow wow (including holders of academic degrees) with increment of vain-glory and affluence; and it is dear to naïve supernaturalists because, as they will tell you, cosmic fog is a substance of things hoped for, an evidence of things not seen.

Mystery of the third and highest order is inherent. It is the mystery of being, of objective reality and of conscious experience; of noumenon (to use the philosopher's word), in distinction from phenomenon. It has never been resolved, and there is no reason to suppose that it ever will be. It is the mystery sooner or later arrived at by the scientific inquirer, who bows before it. It has never interested the pow wow men. There has been nothing in it for them. Nor does it interest the naïve supernaturalist whose God must be attentive and complaisant, a miracle-dispensing providence, if properly approached, but *not* (pow wow and anthropomorphic gods forfend!) a power the same yesterday, to-day, and forever. What could one do with a deity like that!

In relation to mystery of the third order, as to mystery of the first order, "natural" and "supernatural" are words without meaning. They are significant only as they relate to mystery of the second order.

Anything in which we can see the wheels go round is natural only. To the mystical mind it is common, and of no great importance. Anything in which we can't see the wheels go round is supernatural. To the mystical mind it is awesome and supernal. It is sacred; to be shunned or revered, abhorrent if evil, holy if good.

Identifying the supernatural with the unexplained, occultism conceives of *sacra* as self-existent and self-determining, or as created, or (a third possibility of some importance) as imparted.

The human will, for example, occultism affirms to be "free", its own first and last cause, a divinity in its own right, although, curiously enough, it was created and is responsible. The contradiction does not phase occultism, because, forsooth, that too is a mystery! Nothing could be more reprehensible to the supernaturalist than a naturalistic psychology, "accounting for" volition in terms of factors and processes.

The self-existent can create. Plants and animals bursting with mysterious powers, the earth, and the "heavenly bodies", were created, out of nothing, by a self-existent Creator. The self-existent can also impart, and the recipient of imparted quality or

power can pass it on. This again is confusing, but all to the good. It deepens mystery. No cautious supernaturalist would attempt to tell you whether your "animal magnetism" is ultimately self-existent or is only imparted, but you can impart it. The protective virtue of gold, of precious stones, of magical words cut in gems or written on parchment, may well enough be self-sustaining, but if one of these *sacra* be worn on the person, an insuring and assuring exosmosis occurs.

The imparted and participative sacredness of objects and rituals which affirm, portray, and symbolize the major *sacra* plays an impressive rôle in practical affairs and in traditional education. It often calls forth a reverence (or an abhorrence, as the case may be) more intense than any direct reaction to the *sacra* affirmed, portrayed, or symbolized. Sacred writings (the *Talmud,* the Jewish-Christian *Bible,* the *Koran,* the *Book of Mormon, Science and Health,* to name only a few) are to multitudes of believers more sacred than the deity they proclaim. The Scotch woman who did "not think better" of Jesus of Nazareth because of what he did on the Sabbath day and said about it, was only one sincere soul, exceptionally frank, of the dour host to whom Sunday is more sacred than the personal example of their Lord. To millions of voters the flag is more sacred than the country which flies it, and a written Constitution is more sacred than the rights and liberties it defines and guarantees.

Natural science concerns itself with the natural. It looks at wheels which it sees go round and measures them, and their velocities. It discovers how sizes and velocities vary, and charts the relations of wheels and velocities to one another. So it discovers the pattern of the whole mechanism and its functioning. Incidentally and significantly it discovers that nature's mechanisms both resemble and differ from man-made machines. The wheels that go round in nature's mechanisms are not exactly wheels after all. They are items of many kinds, the living cells of organisms, the molecules that compose both organisms and inorganic masses, the atoms that compose molecules, and the electrons that compose atoms. And whereas in the man-made machine the wheels and connecting parts have to be adapted and adjusted by a human mechanician, in nature's mechanisms they adapt and adjust themselves to one another and to a comprising unity by their own contacts and conflicts.

Little by little natural science has found ways and means to make visible, or accurately to portray, the mechanisms and activities, internal and external, of a thousand things once believed to be eternally unknowable. Leaving to metaphysicians (rationalistic and other) all contemplation of "things in themselves" the naturalist accounts for concrete phenomena by progressive adaptations and adjustments, that is to say, by development or evolution. His explanation is ever becoming more exact and more

complete. From time to time he scraps his inadequate older knowledge and goes forward from his new. The occultist, driven from capitulation to capitulation, consistently uses the old to fight the more menacing new. If geology must be taught the occultist insists on the older expositions of it. If biology must be taught, it must be the classificatory biology of Linnæus and Cuvier, without evolution.

Natural science does not expect to invade and dispel a last mystery; it knows its limitations; but the supernaturalist lives in fear that so dire a thing may happen, to the destruction of his "faith", and his occupation. He tom toms and taboos. He carries his tomtommery into legislative lobbies and gets his taboobery into statute law. He formulates creeds and demands subscription to them by teachers, professors, and college presidents. Meanwhile, the observatories and laboratories keep open and do business, and the naturalists work on serenely, too serenely sometimes. As good evolutionists they cannot expect, themselves, to escape the struggle for existence, and they will have to fight not only bacteria and toxins but also for a long while yet, the Powers of Darkness.

CHAPTER II

WHAT OUR CHILDREN BELIEVE AND WHY

An unsurpassed bit of occultism is recorded for us by Thomas Hardy in an early chapter of *Jude the Obscure.*

> People said that if you prayed things sometimes came to you, even though they sometimes did not. He [Jude] had read in a tract that a man who had begun to build a church, and had no money to finish it, knelt down and prayed, and the money came in by the next post. Another man tried the same experiment, and the money did not come; but he found afterwards that the breeches he knelt in were made by a wicked Jew.

The wickedness of the Jew had communicated itself to the breeches and the breeches had communicated it to the Christian, destroying the efficacy of his prayer! What more by way of un-understandable causation could one desire?

Observing that occultism is perhaps still almost as influential in human affairs as it ever was, and that superstition continues to darken human happiness, what proof have we that occultism is knowingly inculcated by education, and that to this day education is laden with superstition of a relatively gross sort? The question is a proper one and prob-

ably it will be asked in good faith by an educational group composed of those who more or less consciously identify education with the activities of public schools in the United States. The multiplicity of religious denominations in America and their mutual antagonisms have happily made our public schools almost perfectly secular. Thanks to this circumstance it is not our public school education that we charge with a systematic handing on of occultism.

It will not do to forget, however, that the teaching of children in public schools begins only after a preliminary education in the home (or tenement) and in the street has conditioned emotional reactions, and created primary beliefs (probably to be carried through life) which have made pupils impervious to much that is of highest value in public school teaching. It is further to be remembered that denominational schools and colleges are under none of the restraints imposed upon public schools and upon state universities. So it happens that we can best get at the truth about occultism in education (of course including superstition, chief factor of occultism) by asking what our children believe and why they believe it.

A comprehensive answer to the question is, They believe what they are told, particularly what they are told dogmatically and authoritatively with a show of conviction, or of fear. The persons who do the telling are parents, nursemaids, cooks, stable-

men, chauffeurs, and playfellows, who, as all of us who remember our childhood know, have a continuing tradition, generations old, and as far as possible guarded from too much revelation to elders. In many sections of the United States a further influence must be reckoned with, namely, teachings by races (including Indians and negroes) in which a very primitive occultism survives in full force.

To go into particulars would be to waste time on things too well known to need recall. Also it is well to observe that many familiar superstitions like knocking on wood and picking up pins are not taken seriously by everybody who pretends to believe them. Even in these cases, however, there often lingers an internal compulsion which its victims are ashamed of. A lady who saw another pick up a pin remarked, "You pick up pins against bad luck. I know I ought to." The thirteen superstition presumably is more grave, inasmuch as up-to-date office buildings frequently avoid honestly numbering the thirteenth floor, travellers shy at Pullman berth 13, and dinner committees avoid bringing thirteen together at table. A superstition which millions of women hold by stubbornly is the belief that an unborn child may be marked, perhaps hideously, by a horrid sight which the mother has been unfortunate enough to encounter.

These instances, however, do not give us the gist of the matter. There is, in most children, a healthy streak of scepticism, and their curiosity is insatiable.

They want to be told *why;* they ask for explanations. Right here mischief begins. They are put off with the remark that they are too young to understand. That would do no great harm if, at the same time, we honestly said to them, "You will learn about it later". Instead of this, they are admonished that there are many things not understood, which never in this present life will be understood, but *which are true,* and which *we must believe.* Now and then a wide-awake boy comes back with, "How do you know they are true, and *why* do we have to believe them?" to which the truthful answer would be, "I know because I was told so, and the man who told me knew because he was told so by a man who knew because somebody before him knew and told, and so on without end;" to which the wide-awake boy would rejoin, "All of which means that you *don't* know, and that nobody knows or ever did know that the things which you say we must believe are really true."

If anyone supposes that this positive inculcation of occultism is not a big part of the educational programme of denominational and other private schools, of denominational colleges in America, and of a majority of private schools and higher educational institutions in the Old World, he doesn't know what is going on. Pupils in these institutions are not for a moment permitted to forget that they are expected submissively to believe certain things for no better reason than that for uncounted gen-

erations they have been proclaimed sacred, not understandable, but everlastingly true.

When a pupil willingly or reluctantly has accepted this teaching, he will before long move on to other attitudes of occultism. First he will habituate himself to the idea that side by side with the world of day by day routine, which science formulates, is a world in which things happen out of the regular order, unaccountably, uncannily, miraculously. Not many children escape belief in such a world until they are grown, and millions of them, when grown, never throw off its grip. Closely associated with it arises a belief that, thanks to the working of a mysterious influence outside of the natural order but now and then breaking into it, one may get something that he wants without effort more arduous than wishing for it and asking for it in steadfast faith that if he unfalteringly believes and persistently asks he will get it.

Here is a complex of beliefs, an outfit of occultism, day by day inculcated consistently and tirelessly by practically all of our educational institutions except the public schools and the technical schools. And the inculcation is so far effective that inevitably antagonism is aroused against any teaching which challenges the cult of the sacrosanct. In the end we get open war on the "impious" and "blasphemous" explanations of the world and its inhabitant, man, which are offered by inductive science.

They who carp will continue to deny that present

day education is deplorably infected with superstition and is systematically occult because they are carpers. But the facts are not hidden. To honest observation, they are abundant and convincing. Our basic education, let us face the facts, is reminiscent of incantation, of magic. It is a decoction of the mighty medicine made in tribal antiquity by the medicine man.

CHAPTER III

WHERE WE GOT THE MIGHTY MEDICINE

MEDICINE was sorcery and incantation, it was magic, sometimes white but as often black for unnumbered generations before it became a scientific control of physiological processes. In sorcery all our "liberal" professions had their beginning. And the sorcerers, the medicine or mystery men, as we know, were priests and teachers as well as doctors, even more priests and teachers on occasion than doctors. From them the occult element in our traditional education was handed down.

The magical medicine itself, compounded of selected superstitions, master words of the jungle, rituals of the bush, and taboos of the cave, the words and antics of Tertiary man (extinct and extant), was extracted from a fearsome belief in uncanny powers, invisible emanations, lurid or shadowy phantoms, inescapable influences, creative and destructive, benign and malign.

Uncanny power to bless or to curse which primitive man apprehended in a million things and places, is called, in the Melanesian tongue, *mana*. The word has been taken over by anthropology and by comparative religion. *Virtus,* in its elemental mean-

ing, is a Latin equivalent. Jesus, as reported in the King James version, said: "I perceive that virtue is gone out of me". *Manitu, orenda* and *wakunda* are equivalents in American Indian languages. In English mana is "It". When children play tag one of them is "It". By touching another he gets rid of "It". Trees have always and everywhere been venerated for their "it", but not often feared. Children playing "tree tag" cannot be tagged when touching or standing against a tree.

At first (or in its most uncontaminated form) mana is impersonal; as impersonal as warmth or cold. It is distinctly not a spirit. It is contagious, like a communicable disease. It can pass by contact from one object to another, or from an object to a person, or from a person to a person, or from a person to an object. Places also have mana—good or bad. In heathen days in Hawaii, special care was taken that the first born of a high chief should be born in a peculiarly sacred spot. Such a place was Kukaniloko in the uplands of Wahiawa on the Island of Oahu.[1] The "high places" of Palestine so often referred to in the Old Testament were sacred peaks of mana.

An adequate idea of the part that belief in mana has played in savagery and in barbarism and of the extent to which it survives in the folk thought and folk ways of civilization can be obtained only by

[1] *Thirty-third Annual Report of the Bureau of American Ethnology*, p. 339.

those who have patience to dig deeply into the history of culture, tribal and more advanced. At present survivals are to be found chiefly among races that practise voodooism or other fetichism, and in out of the way places where backward white communities dwell, but this is not true of all of them, nor perhaps of the more significant ones. There is a much detested survival in juridical doings with which all of us are familiar, and it may be doubted if there has ever been one, or is any now in existence, more revelatory of what, essentially, mana is. I refer to the kissing of the Bible, often demanded of witnesses in court procedures and occasionally under other circumstances. The requirement that a witness shall promise in the name of his God to tell the truth and the truth only, may or may not be more expedient than the mere affirmation, permitted to Quakers, but it is at least logical. The kissing of the Book is a different matter. This is not logic—it is a survival of mana. Neither court officials nor the public in general knows it as such, but to the student of primitive beliefs it is unmistakable. Originally, the idea was that a supernatural emanation passes from the sacred page into the person who kisses it, and that it will curse him if he perjures himself in his testimony.

The ancient law of deodand (of things accursed and forfeit to God), which, as Justice Oliver Wendell Holmes has shown in his *Lectures on the Common Law,* has curious survivals in the Common

Law of England and America now, was an almost unalloyed case of mana.[2]

At this point, a word may be added to what was said in Chapter I about sacred things that are evil and abhorrent. In modern usage the word "sacred" has become so identified with the transcendently good that to most persons the suggestion that the sacred may be unclean, abominable, and dangerous, is strange, even shocking. But in the primary meaning of the word, the "sacred" is the supernaturally mysterious, no more no less, and quite as likely, therefore, to be malignant and to be feared and shunned, as to be beneficent, desirable, and worthy to be revered. Probably the larger part of the mana which mankind has believed in has been thought of as malign rather than as benign.

Mana naturally gets mixed up with luck, and, after awhile (because persons, as well as things, have mana) it begins to be confused with ideas of the animate, or conscious. In this confusion, like enough, various groups of spirits have birth. Spirits

[2] I refrain from citing disgusting acts and beliefs surviving from rituals of the mana of bodily secretions and excretions, of which "spitting on the bait" is the least offensive. I refrain, too, from enumerating survivals in religion, save one. William Cowper's famous hymn beginning:

> There is a fountain filled with blood,
> Drawn from Emanuel's veins,
> And sinners plunged beneath that flood,
> Lose all their guilty stains

was a favourite prayer-meeting drone in New England and elsewhere in my boyhood, and I dare say is yet.

of vegetation and fertility, spirits of places, eerie spirits, sprites and fairies have this origin, more likely than not. Demons almost certainly have this origin in part, for *daimones* originally were men of un-understandable and dread-inspiring power. From them was derived the "divine right" of kings. The development of language, also, contributed doubtless to spirit-making. Adjectives become nouns, charged with mana, and then animized. "The *numina* become divinities. And there is trace of such *numina* throughout the length and breadth of savagery, less spirits than presences, less presences than power".[3] So it came about that, "in the beginning was the word and the word was God", and that Creation was by say so. God said, "Let there be light", and there was light. Teaching was imparting.

There was, however, a more or less independent origin of a particular class of spirits, namely ghosts. Echoes, shadows, reflections in the pool, became confused with fantasies and dreams. Apparitions appeared, and surviving spirits of dead acquaintances. They haunted deserted habitations, graves and other lonely places. They had to be venerated and provided with food and drink, or they became malicious. Ghosts of chieftains became tribal gods. In the course of time all spirit origins (in ghosts, *numina,* and mana) became intermingled and confused. They have never been unscrambled.

[3] Shotwell, *The Religious Revolution of To-day,* p. 106.

To teach and hand on the beliefs and the rituals of the supernatural (the cult of the mysterious) was the supreme business of systematic education from the Old Stone Age, or earlier, down to the rise of Greek civilization. It is the chief business of reactionary education now. Simple but priceless knowledge of the natural (i.e. the not mysterious,) was left to survive by its own urge, or by luck. The arts of shaping flints into tools and weapons, drying skins, weaving fabrics, and, later on, making pottery, shelters, rafts, and boats, these were not in general mysterious, and anybody could teach them, generation by generation, without ritual or sanction. The reaction of the primitive mind to fire reveals the line marking off the perilous supernatural from the harmless natural. Making a fire was natural, anybody could do it. No medicine man's magic or other ritual was necessary. But fire itself was mysterious, and any attempt to dispel its mystery by observation or experiment not sanctioned by sorcery and not conducted by ritual would have been sacrilege.

Gruelling initiation ceremonies through which youths and maidens were put at adolescence were the educational rituals of primitive society. Their purpose was threefold, to wit: to purify, to fortify, to conserve. The growing-up generation must be made harmless, not baleful, not vicious. To this end evil mana was conjured away. Malign "possessions" were cast out. Demons were exorcised. The process of purification was drastic and highly

unpleasant. The process of fortifying was magical, fiendish and horrible. Its purpose was to make youth enduring, valorous, loyal. To insure results the initiate was subjected to a merciless discipline, and "power" was conjured into him. And all this procedure had to be transmitted to the future. Therefore, under fearsome sanctions of secrecy it had to be taught.

So, from the beginning, education was occult. Its origins passed out of memory and were lost until anthropology recovered them, but the cult of mystery flourished, and it flourishes.

In recent days the high priests of occultism have found vast aid and comfort in a dogmatic environmentalism proclaimed by wishful thinkers who can't stomach biological heredity. Its precipitation is a culture cult which must not be mistaken for that scientific survey and history of culture which is the great achievement of anthropology. The orthodox dogma of the culture cult is an assertion that culture rather than biological evolution gave man a better mind than pithecanthropus had. Being orthodox, the cult keeps itself uncontaminated by higher criticism, and does not discriminate between the solid realism of material culture (a heritage of natural knowledge) and the unreality of an immaterial culture which to this hour is in large measure a repellent survival of hocus-pocus and superstition, a vain but awesome repetition as it was in the beginning of the master words and master antics of the jungle.

As for the obstinate biologists, they go on telling

a mocking world that we cannot hope to make our brains better by teaching, inasmuch as learning cannot be handed on biologically. To the mockers this logic is provocative, and not being logical they dispose of its premises of observed and experimental fact by wrathful and noisy anathema.

> Dreaming of deeds they mean to do
> All complete in a minute or two,
> Something noble and grand and good
> Won by merely wishing they could,[4]

they cannot let the image of God wait for illumination until a brain which was created perfect recovers from original sin (handed down in occult heredity!) through a new-fangled heredity not conjured in any orthodox way. They know the short cut, a sanctified and sanctifying education, and they take it; and in order that adequate "power" may not be lacking they join in a soul-lifting chorus of incantation from the glorious road song of the Bandar-Log, (the Monkey People who kidnapped Mowgli):

> All the talk we ever have heard
> Uttered by bat or beast or bird,
> Hide or fin or scale or feather—
> Jabber it quickly and all together!
> Excellent! Wonderful! Once again!
> Now we are talking just like men.[5]

This is Education, of one kind!

[4] Adapted from Kipling. *The Jungle Book.*
[5] Kipling—*The Jungle Book.*

CHAPTER IV

THE EVOLUTION OF QUACKERY AND FIATISM

CHRISTIANITY did not make its way from Galilee to Rome, and from Rome throughout barbarian Europe without picking up and appropriating as it went a considerable part of the older religious beliefs of converted peoples. The circumstance seems to have caused no great perturbation or annoyance. Some of the older beliefs after awhile were proscribed. Others were accepted and sanctified. They were baptized, one might say, consecrated and made orthodox. Nature festival days became saints' days and mana became "grace". So Christianity and paganism became confounded, as ghost worship and the cult of mana had been. Christian populations, therefore, have always had an abundance of primitive material, proscribed, tolerated, or inculcated to feed their appetite for demonism, witch lore, spiritism, magic and mana lore.

Sustained by this heritage, hocus-pocus and superstition have not merely survived. They have evolved. They have become more insistent interests than they were a thousand or ten thousand years ago. They have become more distinctive.

Their money value is greater. The mischief they do is greater. Their priests and law-givers are more cynical and more unscrupulous. As primitive culture they were only a black confusion. Now they are differentiated and segregated, and are become three great orders of cults; namely, the Cults of Superstition, the Cults of Quackery, and the Cults of Fiatism.

Everywhere in Europe, America, and the outland regions of Western Civilization, astrology, augury, crystal gazing, palmistry, voodoo doctoring, count their devotees by millions, and expansive newspapers give pages of their Sunday issues to the news and "literature" of these infantilisms.

An unpleasant book acclaimed by the esoteric claque begins with this: "Wonderful or supernatural events are not so uncommon, rather they are irregular in their incidence. Thus there may be not one marvel to speak of in a century and then often enough comes a plentiful crop of them. Monsters of all sorts swarm suddenly, comets blaze in the sky, eclipses frighten nature, meteors fall in rain while mermaids and sirens beguile and sea serpents engulf every passing ship and terrible cataclysms beset humanity." Whether this jumbled presentation of well-understood natural occurrences and equally well-understood sea-serpent yarns as "wonderful or supernatural events" is naïve and in earnest or only a get-me-if-you-can kind of fooling does not matter. It reveals the mentality of the claque.

Professor E. M. East tells the truth bluntly about reading matter purporting to be "serious". "Librarians and publishers are agog over the increased quantity of serious reading done by the American public. According to report, instructive books covering many different phases of learning are giving a battle to the lighter forms of literature. This is interesting, if true. Personally I am a pessimist,—at least as regards science. Out of some fifty books for the general public purporting to be psychology that I have recently examined, two-thirds appear to have been written by voodoo worshippers."

If voodooism in civilized communities were now only an infantilism of thinking, it would be bad enough, but it is a shocking actuality of behaviour by native born whites of native parents in old and prosperous American commonwealths. It was not the mountain fastnesses of Kentucky and Tennessee but accessible and thriving parts of agricultural Pennsylvania which disclosed a prevalence of pow wow doctoring and terrorizing as recently as 1928.

To enumerate our quack religions and our cults of quack medicine would be a formidable task. Out of the occult heritage deprecated by educated Christians but brooded over by morons and epileptics have sprung our sects of religious freaks. That the propagation of these denominations has been an important spiritual industry in America is explained possibly by the fact that our migrant population, creeping westward through wildernesses and over

plains, lost enough of the European version of the un-understood to permit imagination to inject much originality into what remained. All these sects reveal a characteristic moron trait. The more original they are, the more dogmatically sure they are that their brew of Christianity is the only unadulterated and saving stuff.

It is by no means the ignorant only that sustain the cults of quackery. College bred and professional classes contribute their full share to belief and practice. Couéism ran its course among literary folk and teachers as among commercial groups. Happily it was harmless, which most of the cults of quackery are not. Probably none has done more mischief than the cult, I do not say the psychological theory, of psycho-analysis. Whatever truth there may be in the Freudian teachings, it is not yet scientifically formulated. The practice of psycho-analyzing credulous and egotistical neurotics by uneducated converts to an ism is, to speak mildly, a questionable method of extracting disclosures of personal imbecilities and vulgarities. The best that can be said for this cult is that, like insanity and drunkenness, it probably will hasten the elimination of the unfit.

Fiatism offers us fiat money, fiat credit, fiat prosperity, fiat equality, fiat world peace, fiat decency, fiat aridity and fiat salvation. It was born of magic, nourished by priestcraft, and tutored by militaristic statecraft. Then Democracy adopted it and Socialism gave it a Bible. It became dogmatic and arro-

gant. From 1818, when Karl Marx was born, until 1925, when William Jennings Bryan entered into rest, more nonsense was talked and more insanity enacted into law than in all recorded history before.

CHAPTER V

THE FEAR OF NATURALISTIC KNOWLEDGE

WHY do credulous multitudes, drenched in superstition vulgar or fashionable, fear naturalistic knowledge? There is an answer to this question, and it is one of the most significant facts in the history of the human mind.

From the beginning the men who professed to be familiar with occult things and to be able to direct them, not by understanding but through powers of darkness, were more feared, if that were possible, than the unseen powers and presences which they appeared to control. Their mana was self-attested. Therefore, inevitably enough, when individual men of another order, here and there, began to detect sequences and correlations in happenings held to be inexplicable, and to explain these, they were even more un-understood than the sorcerers were.

There were two things that could be done with such men and their knowledge.

If they were 'insiders", of good standing and influential in secret society or priesthood, above all if their personal mana was venerated, their intellectual activities were sanctioned (not without anxiety) as inspired, and their discoveries were proclaimed

as revelations. The new knowledge then became a new "mystery", and was monopolized. Mathematics and astronomy, hydraulic and architectural engineering and a hundred arts and crafts were "mysteries" in Egypt, and in mediæval Europe.

If, contrariwise, the discoverers were "outsiders" their case was altogether different. Then they were regarded with more than suspicion: they and their knowledge were feared. Conceivably they were innocuous men or even good (a sign from heaven might attest them) but probably they were not. It was safer to assume that they were "possessed" by evil spirits, or that they had sold themselves to the devil. So, for safety, the knowledge that they might have given to the world was banned, and often, doubtless, lost.

It is understood, of course, that scientific knowledge originating "outside" is inimical to "mysteries" and challenging to monopolies. Nevertheless, it will not do to assume that a selfish desire to safeguard privileges and perquisites has played a major part in the age-long conflict between supernaturalism and inductive science. Upsetting knowledge not supernaturally attested (by wonder, sign, or word of holy men) and *because* not so attested has been feared. And when not supernaturally attested it is feared now by a major number of human beings of every race and clime. Inductive science has not sought baptism or blessing. It is attested, and can be attested only by evidence.

Evidence addresses itself to intellect functioning as judgment. Wonders and signs, portents and omens, baptism and consecrations, and assurances by holy men, address themselves to belief.

The supernatural attestations that have most effectively hindered the spread of naturalistic knowledge (backed by nothing better than evidence) have been first, such simple wonders as inborn cleverness and "intuition" (a word bursting with mana); second, signs (including all portents); and third, the averments of holy men.

The mediæval church forbade cleverness to exploit the black arts of magic and witchcraft, because in the mediæval view these supernal realms are domains of Satan, but it never denied that genius of any degree, exploiting their mysteries, was evilly transcendent or diabolically inspired. *Therefore, it has never been heretical to believe or to teach that untutored sagacity, or insight, is a "gift" of "grace", and more to be trusted than knowledge arrived at by laborious intellectual effort.* Multitudes have always so believed and so trusted; they so believe and so trust now. They run after discoverers of nostrums, and have more faith in "born bone setters" than in surgeons. Or, reading a modern meaning into the word "physician" they recall that Asa "sought not to the Lord but to the physicians. And Asa slept with his fathers".[1] How profoundly sin-

[1] *II Chronicles*, ch. XVI, 12-13.

cere is the belief in "intuition" is naïvely revealed in a woman's "last word" on evolution:

> The question should be: "Did Darwin acquire his knowledge of evolution through the medium of the logical faculty or by the light of direct intuition?" . . . Until his followers can prove that he received his knowledge by the light of "direct intuition" we may happily continue to believe that we were made "in the image and likeness of God".[2]

The simple wonders of cleverness and intuition have, however, no dramatic quality. Signs and portents have it abundantly. They awaken apprehension, which easily becomes dread, and then, crazing terror. They have foretold (to properly intuitive minds) calamities and dooms; and always they have "attested" something or somebody. When Elijah challenged the prophets of Baal to choose two bullocks, one for themselves and one for him, each to be cut in pieces and laid on wood with no fire under, and then, with him, to call down fire from heaven, they were obliged by their whole psychology and culture to accept his challenge and to endure his mockery. To humiliate them to the uttermost Elijah caused twelve barrels of water to be poured over his bullock-meat and wood, and into a trench round about:

> Then the fire of the Lord fell, and consumed the burnt sacrifice [Elijah's], and the wood, and the stones, and the dust, and licked up the water that was in the trench. And

[2] Letter in The New York *Sun,* February 23, 1922.

when all the people saw it, they fell on their faces; and they said, the Lord, he is the God: the Lord, he is the God.[3]

Such settlement of a dispute was conclusive, and justified execution of sentence. Elijah took the prophets of Baal "down to the brook Kishon, and slew them there." Is it then un-understandable that for thousands of years, and until a few generations ago, the appeal to heaven was chiefly relied on in judicial proceedings? That evidence was ever substituted for ordeals and compurgations (and has not yet been altogether ousted by reviving superstition) must be regarded as a remarkable chapter in the history of behaviour. No such progress has been made, however, in undermining a surviving faith in portents as prophecies, or in alleviating the dread of them. The most extensive book of portents in the world consists of those parts of the Bible which are the spiritual food of millenarians of all the well-known varieties. Separatist Advent sects have come and gone, and their membership is not now numerous; but their doctrines were never, perhaps, more widely held. The "pre-millenarian" teaching that the end of all things secular is so imminent that efforts to make the present evil world better are useless, if not impious, continues to spread throughout the Protestant denominations.

Inimical to natural knowledge as these notions and more vulgar superstitions are, they are neither so resistant nor so hostile as are the averments of

[3] *I Kings,* ch. XVIII, 21-40.

"holy men". It is these that have obstructed, and will obstruct and delay as long as they can, a general instruction of the people in the truths of astronomy and geology, of biology and anthropology, of archæology and history. For it is these averments that constitute the sole but redoubtable support of the contention that one who does not accept literally the stories of creation and of human history contained in the Hebrew Scriptures is a heretic, presumably an "infidel", and in any case no Christian. It were well to watch him lest satanically he deceive the elect by insinuating that these stories are folklore and legendary media, as Bunyan's *Pilgrim's Progress* is avowedly a fictitious medium, for conveying spiritual truth. The dogma of literalism was announced and proclaimed almost two thousand years ago. It has been handed down in tradition by successive generations of holy men. Holy men proclaim it to-day. On the strength of traditional and present averment, *and nothing else,* multitudes accept it.

At this point let no one suppose (unfortunately thousands of intelligent but uninstructed persons do) that it is the mere antiquity of literalist dogma that gives it vogue. This is to miss the essence of the matter. The averments of holy men are uncritically accepted, not because the attestors have had precessors, *but because they are holy.* Mana or grace abides in them. Their predecessors were carriers of divine and authoritative power, bestowed by Christ

before he took leave of his disciples and transmitted down the generations with laying on of hands and consecration. To doubt that men ordained and commissioned by God have known and know the truth, or to intimate that, knowing, they have falsified it, is sacrilege.

But, it will be contended, not all of the Protestant sects have practised the laying on of hands, and it is precisely those that have not that are the most contentious literalists. This is true, but again, an essential truth is missed. These denominations hold that their ministers, if not in the apostolic succession, are nevertheless "called". In choosing their life work they have sought and obtained divine guidance. They therefore bear the divine attestation. They know the truth and speak it.

Here, I think, we have an adequate explanation of the continuing fear of natural knowledge. It is confirmed by every heresy trial; by every dismissal of a professor who has taught evolution to college classes; and by every legislator who would penalize the teaching of evolution or of "materialism" in any school, normal school, college or university supported by taxation. Are there, however, and notwithstanding, lingering doubts whether such explanation explains? Take then the word of a Prescient Person. It was William Jennings Bryan who averred:

The objection to Darwinism is that it is *harmful,* as well as groundless. It entirely changes one's view of life, and

undermines faith in the Bible. Evolution has no place for the miracle or the supernatural. It flatters the egotist to be told that there is nothing that his mind cannot understand. Evolution proposes to bring all the processes of nature within the comprehension of man by making it the explanation of everything that is known. Creation implies a Creator, and the finite mind cannot comprehend the Infinite. We can understand some things, but we run across mystery at every point. Evolution attempts to solve the mystery of life by suggesting a process of development commencing "in the dawn of time" and continuing uninterrupted up until now. Evolution does not explain creation.[4]

So the case stands. The heresy hunters, the authorities who dismiss dangerous professors, the legislators who would say what scientific doctrines may be taught and what may not, wish to censor education *because they are afraid of mystery-dispelling knowledge.* And they are afraid of it for the same reason that the quaking savage "rooted to the spot" was afraid of the sacrilegious dare-devil who wasn't afraid of the raven.

[4] The New York *Times,* February 26, 1922.

CHAPTER VI

THE UNAFRAID INVESTIGATE

KIPLING's story of Mowgli is a distillation of the history and theory of occult culture. A hundred myths were its sources. Their antiquity we forbear to conjecture. Only less ancient are tales of the origin of naturalistic culture. Lacking other historicity they are evidence that mystery-dispelling knowledge unless "imparted" (revealed) was forbidden and impious. Of these tales, the story of Eve is the most suggestive, and of course, the least understood. Theologians intent on finding in it an inspired account of the beginnings of "sin" and of what they have been pleased to call "the fall of man" have naturally missed its larger significance.

How many readers for example have caught its betrayal that Eve knew the master words of the jungle, for how else could she have made her date with the serpent, and held with him her high and fateful converse? With her friend Adam she had been warned to keep away from the Tree of Knowledge, and both had been threatened with immediate death if they should taste of its fruit. The serpent pooh-poohed, and a venturesome woman listened to

him. We can never repay our obligation to that snake, or to Eve.

Not content to accept warning on authority, divine or diabolical, the lady *investigated*. She resorted to experiment, a nervy thing to do, the first time. Surviving, she persuaded safe and sane Adam to repeat her tryout, so checking up on all her advisers, and making sure of her facts. Natural science was born, and Eve, the experimental discoverer, had incidentally become a teacher of a new kind, unlike the Baloo kind.

She did not die nor did Adam, that day or the next. No wonder there was consternation among the Elohim. The unheard of behaviour of the impudent pair was punished, but not with death, observe. Repetitions of it have been punished ever since. Not all of Eve's progeny have been worthy of her. Uncounted millions of them have been cravenly afraid of discovery, and as parents, nursemaids, medicine men, fundamentalists, and monarchs have tried to keep youth at a safe distance from mystery-dispelling knowledge. Their efforts have been cruel and mischievous, but not wholly successful. A minority of mankind, not identified with the cults, has risen above jungle-mindedness. It has profited by superior native ability (a biological good fortune) and by ceasing to accept Imparted Words as an adequate cultural outfit.

Turning from myth to history we look in vain to Sumer, Chaldea, or Egypt, to Sodom, Gomorrha,

or Jericho for any treatise on natural science, any discussion of naturalistic ideas, or any honour roll of investigators. True, there must have been attentive observers of nature's ways in certain domains. Side by side with astrology a good deal of approximately accurate descriptive astronomy was accumulated, and bits of sound chemical knowledge hid under the wing of alchemy. But natural knowedge was never proclaimed as such. It was kept esoteric and secret, or it was falsely labelled occult.

In Greek civilization we first encounter inquisitors of nature who do not pass themselves off as diviners, conjurors, medicine men, or priests, but go openly about the business of observing and experimenting with intent to understand. The names of many, perhaps of most of such thoroughgoing naturalists of the scientific dawn were long ago forgotten. Their writings were lost. Anaxagoras, condemned to death, but let off with banishment, for having opposed divination and astrology, and for insisting that the external world could be explained by natural causes; Democritus, one of the first to maintain that the material world is built up of atoms; Hippocrates, a path blazer in scientific medicine; Aristotle, the first great comparative anatomist; Archimedes, the first great experimental physicist; these live in fame because their writings, or fragments of them survive.

Within the first one hundred years A.D. while the New Testament writings were assuming edited and

sanctioned form, and a new religion after captivating the Roman populace was beginning to move irresistibly westward, Lucretius gave to the world his superb *De Rerum Natura,* a conspectus of the material universe, which, more nearly than any other classical writing, anticipated modern evolutionist generalizations. A generation later the physician Galen, risking life and good name by his dissections of apes and murderers, put human anatomy once for all on a scientific foundation. These were the last appeals of Greek and Roman naturalism to sanity and intellectual integrity. Occultism swept over them and they were forgotten. Then darkness fell, and the night was a thousand years long. The very civilization of the classical world, its art and literature no less than its philosophy and its science, seemingly perished.

But the calamity of extinction was not to be. Hidden away in monastic libraries and cherished by Arabian and Moorish scholars, enough manuscript material escaped destruction to reveal what had been. Interest in the Greek and Roman languages, and in their literatures awoke here and there. A spark at first; it became a flame. Experimental science revived more slowly.

Safe in monastic seclusion, or protected outside by good standing in monastic orders, intellectual mavericks presently let their minds range. They were few in number and far between in time and space. Cautious at first, they became more daring

as centuries passed. Roger Bacon made known some of his discoveries in optics and in chemistry and spent twenty or more of the best years of his life in prison; but he took the precaution to put his more dangerous reflections into cypher, which is only now giving up its secrets. Mondino of Milan and others revived the scientific study of anatomy. Copernicus promulgated a description of the solar system which flatly contradicted the Biblical account, taken literally. Nevertheless, his system made its way into general acceptance, how and why who knows? Galilei, enjoying the confidence of a pope, demonstrated physical laws in a cathedral. He talked indiscreetly and paid for his loquacity. The advance of natural knowledge had now begun. Its expansion and its increasing certitude since Roger Bacon have been a marvel transcending any imagined by the miracle addicts.

And now natural science has become the dynamic factor of civilization.[1] By natural knowledge the ground-finding and outpost men of the mind are protecting the human race to some extent against calamity. In pursuing and attaining natural knowledge, intellectual adventurers have begun to understand themselves as well as the world in which they live. Appreciating and using scientific knowledge, they presume that men can and should learn wisdom.

[1] The supernaturalists who have been proposing a "scientific holiday" for theological breath catching are really extraordinary in their incapacity to think anything through. See an informing and good tempered article, "That Scientific Holiday" by Professor A. W. Meyer, in *The Scientific Monthly,* December, 1928.

In a word, a hopeful minority of men and women now live and move and have their being in natural knowledge; therefore, more and more they try to make our educational enterprise an attempt to awaken a desire for natural knowledge in the multitude and to bring about a wider acquaintance with it.

The way was prepared for them, more generously and effectively than they have been wont to acknowledge, by the "classical" or "liberal" or "humanistic" education in which the revival of letters found expression and perpetuation. Erasmus and his co-workers inspired it, and for more than three hundred years it proudly held its ground. It was the concrete thing meant by "education" in school, college, and university. But its content did not include the experimental sciences of nature, and its appeal was too narrow. It became the education of a breed. Within the memory of men now living it began to lose its grip. Technical training in the physical sciences drew men away from it. That education too failed to satisfy. To the discerning it became apparent that a new liberal education must arise, broadly and soundly scientific but also rich in the humanities and sensitive to those ultimate mysteries of life which occultism has vulgarized and profaned. Its advent was not long delayed. Already it is half grown. We look confidently to it to discredit obscurantism, and effectively to restrain the enemies of investigation.

CHAPTER VII

THE EDUCATION OF AN OLD BREED

THE humanistic education inspired by the revival of classical learning undertook to establish relations between the minds of college youths and a realm of knowledge not primarily utilitarian. Its value was understood to be æsthetic and spiritual, rather than pecuniary and material. The adjective "liberal" proclaimed that it enlightened and emancipated. Not a technical training for craft or business, the liberal education was held to be a suitable preparation for the "liberal" professions of theology, law, and medicine. The idea back of this contention was, that a study or a profession is "liberal" if, with or without reward, it nobly serves mankind; and is worthily utilitarian if it serves mankind incidentally, in the course of income getting.

Actually the liberal education was not liberal, and it was not always suitable; but it had quality. It did not enlighten, much. It did not often emancipate from prejudices, nor always from bigotry; but it did emancipate from certain kinds of commonness. It did now and then impart distinction. It did not reach the masses. It was not meant to reach them,

and it never could have reached them to the end of time. It was the education of a class, and that class was a breed.

Privileged and other fortunate folk marrying in and in have always been a breed, they always will be. But breeds come, and they go. The breed that was identified with the old-time liberal education has been passing. Only survivals of it remain. We think of it now as an Old Breed.

And because this breed was identified with a particular education its distinction was not adventitious. Like the manners of a gentleman it was a highly artificial product. It was a bearing, an attitude, a reaction to life. Essentially and preëminently it was a disciplined sense of values. That sense already was impaired when the attack upon the old curriculum began. To know what it once was one must be acquainted with elderly men in whom it survives, or one must feel the beauty of it as it lives in the biographical page.

Nor was there anything accidental about such identification of the breed with its education. The education was frankly devised to help the breed to function as a breed; it was meant to fortify exclusiveness and to hall-mark excellence. The college curriculum, the college discipline and the college glimmer of enlightenment were the devices relied on.

The curriculum was as narrow and as rigid as Victorian radicals described it. It was made so and kept so deliberately, because, as long as it was both

narrow and rigid it selected students. The youth that submitted themselves to it and profited by it were a kind. They were the right stuff to recruit a breed, not begotten of the intellectually self-willed and the non-conforming. Ingathering was of complaisant youth who, in their desire to experience college life and to be known thereafter as college bred, could without much restiveness endure the status of infancy until graduation. The elective system had not been invented and infantile minds were not expected to pick and choose among heterogeneous studies. They were expected to become ready to choose advanced studies at the end of college days, when they should concentrate preference and take up the preparation for a life work, professional or other.

Discipline was of two descriptions, namely, "moral" and "mental." There was a pious requirement of conventional behaviour, civil, and religious, and now and then expulsion followed upon flagrant vice. The possibility of this extreme humiliation was not greatly dreaded. The chancellor of a state university used to tell the story of his correspondence with the widowed mother of a dissipated student. The chancellor wrote to the mother asking her to call her son home. She demanded particulars of the boy's alleged misconduct. The chancellor sent them. The son, it appeared, was not a confirmed gambler, but he wasted time and lost money at cards. He was not a drunkard, but he drank too

much. He had not been apprehended in a disgraceful scandal, but his unconcealed association with loose women was regrettable. The mother had been reared in the social traditions of an old and proud community, and they sustained her. She was pained, she acknowledged, by the chancellor's revelations; but consoled, she averred, by his assurances that her boy "was not indulging in vice more than a Christian gentleman might!" "Mental" discipline, by contrast with "moral" was an awesome thing. It was what happened to the mind that wrestled with Latin, Greek and mathematics unseduced by mere avocations. Teachers of the schoolmaster type were obsessed by it, and in the name of it they so misused the classics as to create distaste for them.

The attempt of the old college to enlighten was sincere, but achievement was not great. The enlighteners were more often conscientious than luminous.

With accurate analysis the colleges recognized four domains of intellectual interest, and nominally they required each student to become sufficiently acquainted with all of them to know which he would probably develop aptitude and liking for. These four domains were (and they remain) namely: (1) the realm of languages and literature; (2) the realm of quantitative relations; (3) the realm of "natural knowledge," attained through observation of the material world and experimentation upon it; and (4) the realm of the mental processes and the

moral (including the economic and the political) relations.

Instruction in Latin and Greek and in mathematics was often good, now and then excellent. The teaching of "natural philosophy" did not get beyond mechanics and elementary chemistry. The "natural history" offered was little more than classificatory botany or zoology. The mental and moral philosophies expounded (by a doctor of divinity if possible) were necessarily speculative and dogmatic, for psychology did not exist. Neither, for that matter, did history, as we now conceive and present it. The work in these fields could nevertheless have been immensely better than it was. It could have introduced students to such virile thinkers as Hobbes and Locke and Adam Smith, but it did not.[1]

Of substantial information, therefore, the old-time college student did not get much. If the purpose of his instructors was to equip him with knowledge they did not achieve it; but that never was the major purpose of any reputable faculty, until now.

To large and understanding minds the chief and serious work of the old college was to train young men to discriminate and to appraise, above all to apprehend standards, to accept them and to stand for them. It presupposed and demanded studious habits, but otherwise and at its best its discipline was less a drill than the development of a kind of

[1] Of course not Hume!

loyalty. And while it called for knowledge, the demand was not for stuff to store away, or to use in the business of life. It was for distinction—the distinction of the breed of educated men, to be maintained by the deportment and by the feeling for values which would hold the breed true to its character type. The object was achieved (in so far as it was achieved) by skilfully combining insistence upon preferences. The student was taught to discriminate the grammatical from the ungrammatical, the felicitous from the infelicitous, composition and oratory from haphazard diction. He was taught to distinguish accuracy and elegance in mathematical operations from inaccuracy and awkwardness. He was taught to discriminate fallacy in argument from logic. Above all, he was taught to appraise intelligently (that is, discriminatingly) human values, private and public, which every individual as he lives his life must day by day appraise as best he can. In a small way, but seriously and helpfully, the student's appraisals were tried out in appreciations of literature, of historical and contemporaneous persons, of historical and contemporaneous political systems. The tremendous things of Greek tragedy, the objectives of Greek and Roman politics, the sweep of Roman imperial ambition, made their impression not always deep, but always real, upon the minds of college youth. Their grammatical knowledge may not always have been accurate, their

translations may now and then have been awkward, their Greek and Latin composition may often have been absurd, but they did not go forth from college in the untroubled conviction that nothing worth while had been done, or thought, or written, before the invention of the prairie schooner. They were aware of noteworthy achievements of bygone men with which to compare and by which to measure the product of their own endeavours. And their acquisitions, such as they were, and their intellectual reactions to the things that go with education; to books, to studious men, to the life that is shot through with ideas, they had obtained by serious work. They went forth from college with the reading and the thinking habit.

The Old Breed, then, was exclusive and its liberal education was not expansive. But within their limitations the breed and the education were real, and they were fine. The breed did not believe and it did not hypocritically proclaim that colleges were for hewers of wood and drawers of water. It did not attempt to distribute erudition by encouraging the guzzling of unfermented information. The old breed was proud and it had standards. It did not confound clamour with wisdom, and it never doubted that the educated man who would nourish wisdom must quaff deeply of the old still wines of thought.

Rare vintages are gone, and the Old Breed soon will be. But the vineyards remain. There will be a

new liberal education, and a new breed will arise. Its knowledge will be comprehensive, and its sympathies will be broad. These will be factors of its distinction. It will be more numerous than the Old Breed was, and it may be not less excellent.

CHAPTER VIII

A NEW LIBERAL EDUCATION

WHILE the Old Breed was educating itself and approving the result the business of life was expanding, and its tensions were increasing. A new knowledge not unbeholden to classical literature but not indebted to teachers of it had demonstrated the validity and the value of experimental methods. Discovery was revolutionizing our notions of the universe and our schemes of practical endeavour. A heterogeneous population creeping across an undeveloped continent was trying an unexampled political experiment. Discriminations which a few generations before could not have been made had become imperative. Appraisals which had come down to us as a sacred heritage no longer passed unquestioned. The education offered by the old college was hopelessly inadequate to these compelling needs. How inadequate also it was to the spiritual needs of gifted men born into a turbulent newer life is poignantly shown in that remarkable confession, *The Education of Henry Adams.*

Because of these inadequacies criticism of the old college by the intellectually self-willed and the non-

conforming was presently taken seriously, and then was indorsed and reinforced by observant conservatives. The demand for a more generous curriculum began to be effective rather more than seventy years ago. The first concessions were to "natural knowledge." Physics and chemistry with "teeth in them" (i.e. trigonometry and calculus) displaced "natural philosophy," and laboratory work by students was haltingly substituted for experiments performed *ex cathedra* by an instructor. Geology was brought in, not without trepidation. A "scientific course," parallel to the "classical course" and leading to a B.S. degree was tried here and there, and usually it disappointed. An alternative plan found more favour. Year by year the A.B. course was "enriched." In the eighteen-eighties adult economics and scholarly history, recommended by doctors of philosophy who had studied in Germany, were given place. Then Satan came. Biology got in, and psychology followed. And, lest the humanities should now be neglected, "English" was required.

By this time the curriculum, once so meager, had become a multitude of required subjects before which the student stood appalled. Being young, however, he was not without recourse. He ceased to "grind" seriously, and turned to athletics. One subject he gave up—his native language and its literature. After 1900 universities began to get specializing graduates who had never read anything but under-

graduate textbooks and could neither write nor speak English properly. Requirement obviously had become preposterous. The elective system, already on trial here and there, beguiled. Then came chaos.

Selection ceased. Discipline broke down. Undergraduate knowledge became smatter. Enlightenment became knowing how to "get by." Alumni became "rooters," whose idea of loyalty to Alma Mater was to fill the bleachers at ball games and never to miss a "smoker."

Demoralization spread insidiously, more and more inhibiting the supreme function of education in human society. Educated men who *are* educated try to apply intelligence and knowledge to the improvement of life. Therefore, the effectiveness of education in any age or period, let us say a generation, is indicated (I do not say measured, for that is too precise a word) by the state of human life at the time and after.

If the distribution of wealth is erratic and fantastic, bearing little relation to the economic or other value of its owners to the world; if superstition is fashionable; if enlightenment has to fight for life against influential ignoramuses and authoritative morons who would forbid investigation and impose creeds on teachers; if manners are common and morals Pecksniffian; if legislation is stupid, fanatical and dishonest; if direct action of the violent kind competes with government, and if government itself is the rule alternately of organized grafters

and gangs of moral bullies; it is reasonable to assume that intelligence is not being applied in large measure to the improvement of life. Education, then, we may further assume, has partially failed in its highest task. Either it has wasted itself in trying to educate the incompetent beyond their capacities and has neglected to educate the competent adequately, or it has educated mistakenly. Its methods have been wrong, or its scale of values has been wrong; or (and this is more probable) its methods and values both have been wrong.

The picture is overdrawn. The situation is by no means so desperate as this description would make it appear; but it is bad enough to be deplorable. It cannot be met by technical training, which has continuously been improved, nor by a narrowing specialization. It can be ameliorated only by a liberal education real and worthy of the name; an education adequate to clarify vision while extending its range, and potent to develop individual and collective self-control.

One substantial gain has been made. Biology, psychology, and sociology have advanced their realistic account of human life far enough to show us what the make-up of a truly liberal education must be.

Like the old liberal education the new must insist on a critical attention to values, of two orders, namely, values of ends or satisfactions for which we strive, and values of means or methods on which we

rely in our striving. This attention, however, must now be more than a discreet application of traditional criteria to disturbing dissents and innovations. It must be a fresh scrutiny, illumined by scientific knowledge, and under that light much that seemed indubitable, although transcendental, will be challenged. Much that fed pride will become, to realistic thought, poor, narrow, illiberal. Other ends, finite and empirical, and satisfactions contributed by a widening adventure of life and an increasingly generous participation in it, will be preferred.

These are general affirmations by way of stating a thesis. Let us turn to the concrete, and specific.

On Sundays a large majority of the Old Breed assented to the Westminster dogma that the chief end of man is to glorify God and enjoy Him forever. On other days the same majority proclaimed in attitude, behaviour, and contention that the chief end of an admirable breed, *is the breed.* Perhaps this conduct was only a bit of the relativity to which we descend when the atmosphere of the Absolute becomes too rarefied for easy respiration.

Satisfactions which were part and parcel of an approximate realization of breed pride were, self-respect, decorum, manners, the assurances of religion, the respectability imputed to punctilious observance of a conventional moral code, enjoyment of classical literatures, and pleasure in niceties of speech. Worthy of all esteem, these "high brow" satisfactions were offensive affectations (religion

and morals excepted) to the demos; they always have been; and in the cultural debâcle which followed upon disintegration of the old education they lost much of their hold on collegians, who now in droves abdicated cultural leadership and gave themselves up to Babbitistic joys—speed, movies, emotional debaucheries transferred from camp meeting to stadium and ring, bigness and power.

No better joys than these (or should I say nobler ones) need be looked for until an intellectual interest in the significance (and by reason of significance the value) of human life reawakens. By the supreme value of the chief end of man, whatever that may be, the whole scale of lesser values is determined. The mere feeling of life and for life, which satisfies the unthinking, does not fix values, however it may vary in volume or intensity. There must be intellectual appraisal.

New appraisal will not rehabilitate the Westminster dogma, fashioned by a theology more political than religious. The new appraisal will be inspired by a radically antithetical declaration, admittedly reputable, but disturbing to orthodoxy: "I am come that they (human beings, common people, not a deity) might have life, and that they might have it more abundantly." [1] The appraisal will be guided and checked up by biology, which weighs the relative values of the individual and the race under varying circumstances; by psychology,

[1] *John* X, 10.

which weighs the relative and varying values of immediate and long-time satisfactions; and by sociology, which weighs the relative and varying values of individual and societal interests. The conception of the chief end of man which may be expected to emerge is that of a full-fledged human personality, striving in the light of knowledge to live bravely and beautifully, sincerely and generously. What are the scientific grounds of such expectation? Are there scientific grounds?

Apparently (to the scientific mind), and presumably, the business of living bodies is to "carry on." It is to live and to perpetuate life. It is to function and to experience. If existence is for any other purpose neither wise man nor fool knows what the other purpose it.

But why *should* life perpetuate itself? Why should human beings desire life more abundantly? "What is it all for?" Has it meaning, significance? Or is it "only sound and fury"? Sooner or later these questions confront the thinking mind, but too often the thinking mind sneaks by them, which is a mistake. It were better to close with them, and have it out.

Lying awake in the morning you idly watch a dance of motes in the sunbeam. Does the erratic motion mean anything, has it significance? You doubt it. Presently you are out of doors. On the garden paths hundreds of earth worms driven from their holes by last night's rain are crawling and

squirming. Countless ants are tirelessly hurrying from and to their tiny hill. Do the to-ing and fro-ing and the squirming mean anything? Have they significance? You don't know. You go downtown. In a crowded street children are dancing and singing about a hurdy-gurdy. Does *this* activity mean anything? Has *it* significance? You say "yes," the children enjoy it. They find it "fun."

Why can not grown-ups see as children see elemental truths in their stark simplicity? These little ones about the hurdy-gurdy have answered our question. Life is significant *if the living like it.* Squirming is significant if the squirmers like it. Perhaps the motes enjoy their dance! Who knows? [2]

That values derive from enjoyment, from the satisfaction, the happiness, of conscious beings somewhere, at some time, is of course denied by authoritarians, intuitionalists and other dignitaries, whose low esteem of hedonism nevertheless often charmingly exposes them as themselves hedonists in their own despite, a circumstance which confirms the hedonist in his conviction that all philosophies of value reduce to hedonism under analysis sufficiently

[2] Within scientific limits I am a behaviourist in psychology, but I am unable to follow those behaviourists who deny or seem to deny consciousness, pain and pleasure, preference and satisfaction. Two reservations must be made. One is that the existence of unconscious material bodies (if there are any) and of living creatures incapable of enjoyment (if there are any) is significant if they engender and sustain organisms that can enjoy. The other reservation is that curtailment or sacrifice of present satisfaction is justifiable if thereby harm to one's self or to others is prevented, or if a greater future satisfaction is made possible.

remorseless. At one point, however, the hedonist also must beware of overstating his case. He can not say that happiness *in se* is our supreme value, since it is necessary to remember that happiness does not exist apart from living individuals. It is an essential factor of value, but not the only one. Supreme value is the appraised excellence of a life desirable and desired, lived by concrete individuals potentially happy, and becoming actually happy through adequate functioning in a suitable environment, to which they are adjusted. Such individuals are persons, their quality is personality. They are capable of cumulative happiness, attained through a proper distribution of immediate and deferred satisfactions, and through adjustments to one another, with resulting gladness in the happiness of one another. Persons are the carriers of ulterior human values.[3]

The old liberal education did not always escape (or shun) the sin of dogmatism. There were times when it presented excellence to the student mind not simply (in faith that the excellent when perceived by an unperverted intelligence must be appreciatively valued) but strenuously, as something to be believed in. When this happened the selective function of a liberal education went wrong. Unabashed young dogmatists intent to set the world right, were unintentionally but effectively helped to survive and

[3] This contention is more fully set forth in my *Principles of Sociology,* New York, 1896.

babble. Young fellows of unperverted intelligence were unintentionally but effectively discriminated against. In coming years no teacher who knows what he is about will present the conception of a well made-up personality as something *to be believed in*. He will present it rather as something dynamic and commanding, which is valued when seen; and he will know that the everlasting difference between intellectual goats who can get a liberal education, and instinctive sheep who cannot, lies precisely in ability and inability, respectively, to see.[4]

In like manner will the liberal teacher present the satisfactions which the fully living personality finds in knowledge, in liberty (of action, conscience, and discussion) in a morality consonant with knowledge and liberty, and in a religion also consonant with knowledge and with liberty. He will expose the student mind to them and let them proclaim themselves, subject to appraisal of genuineness and quality. Analysis of these satisfactions, and of their functioning in the evolution of personality, must now engage our attention. Our purpose is to see as clearly as we can how and to what extent a liberal education if it is to be true to itself must necessarily concern itself with these things, and with their values.

[4] The metaphor of the sheep and the goats has always been presented in disparagement of goats, by the sheep!

CHAPTER IX

NATURAL KNOWLEDGE IN A LIBERAL EDUCATION

It should be unnecessary to explain that the knowledge of which we speak is a body of observations that have been verified by repetition and other checks, and of verifiable inductions. In a word, it is the "natural knowledge" discriminated in these pages from occultism. Regrettably the explanation is not superfluous. Our college students have a foggy notion that knowledge is more trustworthy than belief or conjecture, but *why* it is most of them do not so much as conjecture.[1]

The new liberal education then must not only include natural knowledge, and respect for it, but also a fine understanding of what it is and is not; which can be developed only by training the student in getting knowledge and in testing it. Testing it is ascertaining whether it is verifiable by further observation and experiment. Alleged knowledge that can not meet each new challenge and is not consistent with all verified knowledge, old and new, is not knowledge. There is, however, true knowledge other than the physical and biological sciences,

[1] This is a severe indictment of our colleges, but it is true. The evidence has been thrust upon me.

human history, for example. Archæologist and historian have been learning to verify.

Inasmuch as it is no longer possible for any person to master all sciences, the knowledge of the most liberally educated man or woman can be comprehensive only representatively. It can and should comprise mastery of one science, or of a division of it; familiarity with the essentials of scientific method; and acquaintance with the premises and major conclusions of all the general sciences. These must be taken on the authority of the masters in each science, and the liberally educated person must be able to ascertain, not by hearsay but by his own checking up, *who the masters are.* They can always be identified by their methods and by their reactions to the work of fellow investigators.

In another way, also, the knowledge of the liberally educated must be representative. It must include knowledge of what *will* be; knowledge of what *can* be; knowledge of what *should* be, and knowledge of what, by human decision, *shall* be.

It has become possible and necessary to discriminate a multitude of things that *will* be from another multitude of things that can or could be. Doubtless there are more persons living now than ever before who are ready to believe tales of supernatural wonder, but they are not as large a percentage of the population of the world as they were once; and whereas the number once included the well-educated along with the ignorant, it does not include a large

proportion of the well-educated now. We have become acquainted with a natural order in which A and B occur together. No exception having been observed, we predict that they always will occur together and proceed successfully to build a considerable part of our plans upon the prediction. We take chances with laws made by men but do not expect to "beat" the law of gravitation or to "get away with" the live wire. Nevertheless, few of us can tell *why* we entertain these expectations. Few of us have learned *how* inductive science identifies the inevitable; therefore, too often, we do not know it for what it is when we encounter it, and we waste our resources of energy and money in fatuous attempts to prevent what, in spite of us, *will be*.

Conversely, it has become possible and important to discriminate what *can* be from what inevitably will be, and thereby to widen the range of human achievement. Gravitation is inevitable; the floating of iron steamships on water and the flight of aeroplanes are not inevitable, but they are possible. The material progress of mankind has been made by discovering and identifying what can be, and by intellectually working out the relations of possibility to order. Between these two there is no contradiction. Shots fired at a target and the thrusts of a piston obey the same laws of motion; but while the piston-head hits the same point in space time after time indefinitely, the shots do not. They scatter. Nevertheless, the range of scatter can be ascertained

and, therefore, possibilities can be. By failing to discriminate possibilities from certainties and to measure possibilities, education has bewildered countless minds instead of clarifying them. It would be difficult to say whether it is more mischievous to teach that a process of nature may be upset from without, or to teach that all natural processes are as uniform as the motions of a machine, ignoring the statistical variabilities and uniformities of such turbulences as flame, whirlwind and the behaviour of crowds. The atom can and does disintegrate, it can behave as a machine or as a turbulence; there are biological mutations; instincts can be tied up to new stimuli and be made to keep step in habit.

Because these discriminations of the inevitable from the possible and of the possible from the inevitable have become possible and important, we are put under obligation to revise our notions of what *should* be. Here we pass once more into the realm of values; of the expedient and the ethical, and discover another reason why a liberal education must include an enlightening criticism of values. Among the things that can be we choose, but we choose at random unless we appraise. In our efforts to appraise, we obtain help from inductive science, because inductive science tells us what phenomena are factors of life, what are factors of mentalized life, and what are factors of a mentalized life that understands itself and its world. But all this help is a gift of information only. It cannot make sensi-

tiveness more sensitive. It cannot clarify vision or make judgment more trustworthy. To achieve these improvements, there must be practice, which only education can provide and direct.

Finally, our modern life calls imperiously for discrimination and appraisal throughout the range of what by our will *shall* be. If a thing can be and should be, it clearly is for man to say whether or not it shall be. We here enter the domain of decision and of deed. Of all the failures of education none is more reprehensible than failure to incite college-nurtured men and women to live wisely and sturdily on the experimental plane. Education that stops at sophistication is not merely vacuous, it is pernicious. If, however, the experimental life is to be lived wisely as well as sturdily it must hourly take counsel of criticism and untiringly compare values.

That so many of our educated men are vague on the nature of knowledge is bad. Their mental reaction to liberty is worse. They are befuddled, and partly for that reason are indifferent to rights and obligations. They help to make laws to restrict the liberties of other men, but themselves disobey those selfsame laws; and are not tormented in mind or conscience by the preposterous inconsistency.

I shall not here consider the ever varying relations between liberty and government, but I will call attention to certain inevitable relations between liberty and education.

Without liberty to act spontaneously and to talk,

to explore and experiment, and to incur responsibility, there can be no "free moral agency" and no evolution of personality, and apart from a development of personality the enterprise of education is bootless. Yet, such is the paradox, education began in restraints of individual liberty, and an educational procedure which does not set bounds to liberty is not merely unknown, it is unthinkable.

It was for the general well-being that youths at adolescence were initiated into tribal ways, purified of uncanny contaminations, and energized with sacred power; and it was for community defence and aggression that by discipline they were made adequate and dependable. It could hardly have been otherwise. Existence was precarious. Perhaps nobody clearly saw, but certainly everybody felt, that the individual of a social species could carry on only in a society, and with the aid of his fellow beings. Therefore, inevitably, education in the larger sense had to be a community affair, and to be seen from a community viewpoint.

And it matters for us that these original considerations continue to be primary. Whenever and to whatever extent human society, whether as polis or as nation, is endangered, the individual for the time being exists, and must exist, for the community, or, as the Greeks would have said, for the State. Not until and when all is reasonably safe is it possible to perceive even vaguely that society in the long run exists for the individual. Only then can education

be seen from the standpoint of the individual regarded as a potential or actual person, and the happiness-yielding functioning of the personalized individual be apprehended as the ulterior business of life.

It will be a delicate and difficult task, demanded of a new liberal education, to help adolescent students apprehend and justly appraise the expedient scope of liberty and the expedient bounds set to it by community interest and by the nature of the educational process. I say "apprehend," a different matter altogether from the obedient subscription to shibboleths and dogmatizings which the older education (never forgetful of the breed which had created it) undertook to obtain. The task can be achieved in one way and by one means only. There must be insistence upon knowledge, thorough as far as it goes, of life as an adjustment (including readjustment) to conditions and surroundings; in a word to life as evolution, biological, psychological, and sociological. These are hard sayings to the fearful and the reactionary. So be it. Let us courageously say them.

In the same way and by the same means may the new liberal education hope and attempt to develop in the quick minds of unperverted youth a true apprehension and a just appraisal of morals and religion, vital adjustments (proceeding through readjustment), as they are.

The taboos and conventions which constitute the morality that we have inherited from primitive man

(savages, and terrorized by the unknown) no longer suffice us. In part they are no longer suitable to our needs. Often they befuddle and obstruct. For criteria and standards of right and wrong that can serve us now we must turn to our newer sciences of man.

These tell us that right choice and conduct are preference and behaviour which help us to function normally and fully; to adjust; to live "more abundantly"; to create; to attain happiness and to help our fellow beings to attain it. Accordingly, they tell us further that conduct to be right must first be physiologically right. It must not increase the morbidity rate or the death rate but must lower both. It must, second, be psychologically right, and prove that it is so by increasing our self-control, and by ridding us of complexes, obsessions, grouches, and brain storms. And it must, third, be sociologically right, and prove itself to be so by maintaining security, facilitating mutual aid, and diminishing turmoil.

Adjustment of personal life to reality, ultimate and universal, is religion. While science is our attempt to understand reality (the universe), religion in its most general phase is our attempt to accept our relation to reality and to live in the universe as ordained.[2] As an attitude religion is the will to "carry on", whate'er betide. As an emotion it is

[2] It was the ridicule of Margaret Fuller's remark to Emerson that she "accepted" the universe, and not the remark, which was imbecile.

faith in the possibilities of life, in hourly conflict with a prostrating fear of uncanny evil. As effort, socially elaborated in ritual, it is an awe-inspired and awe-inspiring attempt to forefend mysterious evil and to draw upon mysterious sources of strength.

From the beginning until now active religion has been a striving after immunity and power. Too often, however, it has been content to attain a "feeling" or "sense" of immunity or of power. It has shown a disposition to accept "immediate experience" as adequate evidence of real immunity or real power. It has not diligently sought to safeguard itself against illusion or, when it has, it has not known how to proceed. There has been work, therefore, for science, which undertakes to "check up". The business of science is to discover and make sure about the conditions under which we can achieve real immunity and accumulate real power; and to learn what we can do with power, when we have it, without inviting disaster.

Between science and unchecked religion there is antagonism. Of what avail is denial? Worsted by science at every turn, unchecked religion has tended more and more to become a standpat reactionary belief that the beliefs of dead men are more believable than the knowledge of the living. Between this creed and natural knowledge there can be no compromise.

And there will be none. The creed of the extinct will find neither place nor recognition in a liberal

education. The religion which a liberal education can countenance and stimulate must be dynamic and vital. It must be a sustaining faith in the possibilities of life, and a resolute will to carry on, bravely and beautifully, sincerely and generously.

Of all pitiful tragedies the most heart-breaking is a despair of youth which ends in self-inflicted death. A religion which fails to fortify the will to live bravely is a broken reed.

A life lived bravely is usually lived beautifully, sincerely and generously. There is, however, one aid to sincere living which it is important to keep in mind. The sincere mind is absorbed in the quest of truth and in the expression of truth. This is the mind of the dispassionate scientific worker, of the creative artist, and of the engineer. There is another mind, not necessarily nor always insincere, but liable to be; in fact, in continual peril of being. It is not concerned to produce as the farmer does; or to make, as the artisan does; or to create as the artist or the engineer does; or to discover as the scientist does. It is intent to "sell" something, or to "put over" something. Salesmanship and political activity may be and should be no less honourable than useful. A liberal education should stimulate inquiry how to make them more generally and conspicuously so than they are now.

The foregoing brief is little more than an enumeration of the intellectual content and appeal of a

new liberal education. What of performance? What may this education be expected to do, to those who get it?

Education of any description, good or bad, stimulates mental processes if it happens to impinge upon cerebro-spinal mechanisms that are capable of cumulative reaction. It awakens conscious interest. It establishes mental contacts with items of belief and of knowledge, and it exercises a something which we will continue to call "the mind", without commitment to any assumption as to what that something is. It encourages attentiveness and the habit of persistence, and facilitates whatever organization of the mind is feasible.

We may expect from the new liberal education a more thoroughgoing and, on the whole, a more satisfactory carrying on of these performances than the education of the Old Breed gave us, or than any merely technical education can give us now. Attentiveness, for example, we may presume, will not restrict itself to concern with dogmas, prevailing ideas, and approved forms of expression. It will broaden out into such activities as listening, observing and comparing. Persistence, we may take for granted, will be directed upon the achievement of proficiency in one or another activity, even, in certain instances, proficiency in what is called "thinking". The organization of the mind, we may hope, will bring about coherence of behaviour and insure steadfastness of aim, in contrast to the brain scatter

of men and women who react only to immediate happenings and are blown about by every wind of doctrine. It should achieve the subordination of primitive reactions to later evolved ones, and of petty interests to important ones. In a word, it should correlate, co-ordinate, and focus all drives and responses.

Any education that can make good in these matters will deserve well of mankind. Our new liberal education should do this for us, and more, a something else which no education hitherto has so much as attempted. It should create an increasing number of examples of *the liberal mind.*

Minds which proclaim themselves liberal rarely are so in fact. They have a way of assuming that liberality of mind consists in faddistic free-thinking and proclamation of views that timid folk count dangerous. Nothing could be more grotesque. To be truly liberal in mind is not exciting. It is difficult and wearisome. It is, in fact, the painful practice of listening with courteous attention, and as far as possible with understanding, *to views which are offensive to us.* The old education encouraged this practice (within limits) because it was held to be one of the habits of a gentleman. The new liberal education will encourage it, we may venture to hope, because it is one of the habits of the considerate personality, of whatever social status, and because also without it one is never able to break away from obsessions, never able to see more than the very

obvious possible moves on the chessboard of life, and never able to feel the challenging difficulty of arriving at a comprehensive and "checked-up" notion of ourselves and our world.

To shape a mind attentive, persistent, organized, and liberal is to create a personality as nearly as possible adequate to the struggle for a happy existence in our present world. This is the task, not easy but not impossible, which awaits the New Liberal Education.

CHAPTER X

POSSIBILITIES AND PRESENT URGENCIES

The old liberal education was identified with universities and colleges, the "higher institutions of learning", which cherished, elaborated, organized and imparted it. Preparatory schools participated in the cherishing and imparting. Many pupils in these schools who never entered college and many college students who did not complete the four years course obtained from their brief academic experience something that was worthwhile. They lived in an "atmosphere" and were exposed to "illumination". Breathing the one and reflecting the other, their preferences and their attitudes were on the whole improved, as judged by Old Breed standards.

The new liberal education in its turn will be academic, but not that only. It will wage its war upon occultism in universities, in colleges and in schools but also elsewhere. It will reach a large number of secondary school pupils as the old liberal education did, and in addition a multitude of adults whose schooling has been little but who now in schools of a new kind and in accessible libraries may explore the realm and the range of ideas if they have the desire and the grit for self-education.

The old preparatory schools were expected to discover and select pupils able and inclined to profit by higher education, and incidentally to prepare them for it. Secondary schools of a new type will prepare pupils for as much of the new liberal education as they can appropriate, and incidentally select those who should be encouraged to attempt the college course.

Preparation will have to begin further back than it formerly did and proceed less by formal tests and disciplines hitherto relied on than by scientific processes of *conditioning*.

I use the word in the technical meaning which it has in physiology and psychology. Primarily it denotes an adaptation of a response mechanism to a novel stimulation. When by intense, repeated, or prolonged association with a stimulus which normally brings forth the simple reaction known as a reflex, another stimulus begins to produce the reaction and, after a while, to produce it invariably, the reflex is said to be "conditioned".

Complex responses involving many reflexes can be conditioned and reconditioned as wholes, and many times. The organism in its integrity can be conditioned and reconditioned. Religious or other conversion is a reconditioning, relatively profound. When it occurs, life cuts loose from old stimuli and reacts thenceforth to new ones. Education is a continuing reconditioning. It can be good or bad. Until this time it has been so largely good that we

yet have faith in it; but in so far as it has been directed by dogma and by wishful thinking it has been bad. Of method, class room routine has been a major factor. It will continue to be an important factor but a minor one. Experimental project methods, and innumerable variations of the "Dalton plan," will be factors, but none of them, nor all of them in combination, will satisfy requirements. There must be avoidances as well as inculcations.

An education which is to fit human beings for successful and happy living and so be worth while must proceed in keeping with life processes. It must take counsel less of wishful and speculative thinking than of checked-up biology, psychology, and sociology.

At all emotional costs one line of wishful thinking must be shunned, the fatal belief, namely, that education can fundamentally make us over. This belief identifies experience, including conditioning, with the ability to profit by it (the ability, that is, which is inborn intelligence) and confounds heritage with heredity.

The hereditary outfit of man comprises his bodily constitution and prepotencies, his "original nature", as born. It comprises, therefore, his bones and skin, viscera and muscles, neurons and glands, reflexes not yet conditioned, and immature organization; all normally sound, and for the moment adequate, or, by ill fortune, defective and unco-ordinated. Original nature is biophysically transmitted from generation to generation. The medium is germ plasm.

Upon original human nature environment plays; now feeding, now starving, now cutting off stimuli to which the organism at birth reacted, and now raining new stimuli upon it, thereby compelling the bewildered creature to cast about and to fumble, to adapt and readapt itself, and by failures and successes of random (or of shrewd) trial, to learn.

By learning we achieve habits, and these constitute our "second" or acquired nature—our conditioned nature. Upon conditioned nature society (aggregated fellowmen organized in relationships and activities) reacts with reconditioning stimulation and with pressure. In the process society discourages various habits and proficiencies and fosters others. Habits that survive, society consolidates into a heritage of culture and culture-patterns, comprising folkways of practical activity, manners and morals; comprising also languages and folklore, literatures, religions, arts and sciences, laws and schemes of government. Comprehended in heritage is everything that the lawyers call "hereditaments", corporeal and incorporeal, and much else. Heritage is socially transmitted from generation to generation. The media are oral traditions and written records.

Knowledge is comprised in heritage; all extant knowledge is a part of heritage. It is accumulated by native intelligence but only as heritage can it be handed on. Native intelligence, by contrast, cannot be augmented by feeding it on knowledge, or other-

wise, and it cannot be handed on as heritage; but it can be conditioned by heritage. Its functioning can be improved.

Why so much insistence on these discriminations? Of theoretical interest they undoubtedly are, but what is their practical bearing upon our present theme? *Why* must we shun the belief that education can fundamentally make us over? If the functioning of intelligence can be bettered by reconditioning why not improve as far as we can, and not bother about original nature? This question is crucial. Happily the answer to it is matter of fact and simple.

The devices and methods of reconditioning that are best for superior native intelligence cannot be used upon inferior native intelligence without disaster; the devices and methods that are effective with inferior native intelligence are ruinous to superior native intelligence; and the functioning of inferior native intelligence cannot be improved sufficiently to enable it to profit by the procedure suitable to the superior.

In recent years much energy has been devoted to improving the teaching of defective, retarded, and other low-grade minds. The interest in this endeavour has been almost pathological. Meanwhile, interest in the effective education of high-grade minds has been until very recently almost nil. This unfortunate maldistribution of educational motive power may reasonably be attributed to igno-

rance of biology among humanitarians of the badly educated sort.

Without attempting to present detail, which is technical, I will mention, but not analyze or discuss, differences of procedure that should be followed in the educational conditioning of inferior minds, on the one hand, and of superior minds, on the other hand.

Inferior minds normally respect authority, defer to it, and expect to be guided by it. Superior minds normally rebel against it. Inferior minds are susceptible to suggestion, superior minds much less so. Inferior minds normally resort to a confessional, ecclesiastical or Freudian. Superior minds, if not ridden by a fixed idea, do not. The old tradition of nobility, that an aristocrat neither apologizes nor explains, is ingrained in them, sometimes to their undoing. Accordingly, in the training of inferior minds, authority, suggestion and inducement to self-disclosure, may all be used (with discretion) to good purpose. Wise guidance is the need of these minds. They must be led along safe, well-trodden paths.

Superior minds are daring and resolute. They require opportunity and freedom for intellectual adventure. They must be conditioned by responsibility. Under responsibility for results they should be encouraged to inspect, experiment, and explore. They should be expected to acquire self-reliance and self-control; expected also not to believe all that they

hear or surmise, but by systematic checking up to "prove all things".

Here is disclosed the deep cleavage between an education useful but not, strictly speaking, liberal, and one that is liberal really and in the broadest sense. The new liberal education offered to all sorts and conditions of men will be appropriated by many (a large and worthy company) but not by all. It will be seized upon by such as by original nature are potential discoverers, leaders, and creators.

How shall suggestions and projects of liberal education for all men and women, academic and other, who desire it and can profit by it be converted into actuality? The undertaking promises to be perplexing. Not only will the determined opposition of occultism be encountered at every step but also difficulties of a practical kind, economic, political and other.

It will be necessary to give unceasing attention to selection. Often it will happen that only a little can be undertaken at once. Most of the things that we regard as obligatory we shall of necessity ignore for the time being. From among those that we hold to be of chief importance we must choose such as are feasible, which we can get money for and influential backing for, and we must more sagaciously than now adapt educational procedure to the widely various kinds, groups, classes of individuals to be educated.

What, for example, shall we do for the child? We must bear in mind that it is not enough to think of the child as a potential personality and stop there. To develop him as a personality is indeed the goal. But the child is also a member of society. We must study him, his behaviour, his adjustment to his world, with the question ever before us, what kind of a member of society is he in the way of becoming?

What shall we do about the public high school? It is the highest educational institution which millions of boys and girls have expectation or serious desire to attend. When they go out from it their formal schooling ends. It is plain that the public high school cannot do effectively one-half of the things that are demanded of it. What things then should it attempt? Of these things, when wisely selected, which can it actually do well enough to make the attempt worthwhile?

Then there is the multitude of young men and young women who for merely adventitious reasons want to go to college but who are unfit for college and can never profit by it, whose presence in college or university merely clutters up the place and creates an entirely unnecessary nuisance. And of those who "get through college", as we say, and are granted their respective degrees, may anything be expected beyond that forming of their tastes and values which inevitably will have been accomplished, for good or for ill? Cramming is, and always was, mischievous and absurd, but it does not follow that the college

graduate should be ignorant. There can be no harm and there may be advantage to him and to the world if when he goes forth he knows something. What should he know? Not everything, and no wise man will expect him to know more than he can know well and make use of. Are there certain things that every college graduate should be expected to know?

Lastly, not to carry specification too far, what should the college president know? In America he is a person of influence and importance. What a college shall be and what it shall do are actualities over which he has a far reaching control. Is it enough that he should be what we call "a personality", a man of presence, a good mixer, presentable on public occasions, a persuasive talker, a successful money raiser? Or if, in addition to these qualifications, he has culture, high standards of conduct and sound judgment, does he then offer us all that we may rightly demand? Should he, over and above these assets, know something? Should he be acquainted with what has been going on in the world of ideas, in scientific research, in political and social experimentation, in all that constitutes the surging life of mankind?

To find answers to questions like these, concrete, detailed, and practical, and to perfect experimental methods which shall continue to be experimental, escaping finality, are present urgencies in education. We turn attention now to them.

CHAPTER XI

THE CHILD AS A MEMBER OF SOCIETY

When educational problems began to receive attention as problems the attitude of society toward the child began to change significantly. As far as we know there never has been a time when society, as savage horde, or tribe, or state, has not asserted authority over children and youth, often against the claims of parents. Now it begins to concern itself with obligations. Nation, state, and local community are assuming guardianship of the child and responsibility for his future. The child has become a ward of society.

With the rise of a scientific psychology another way of regarding the relation of the child to society began to interest people. We began to have studies showing how hereditary prepotencies are conditioned, and how habits are fashioned by example, teaching, coercion and incentives. This field has been well worked—we have a mass of interesting material relating to it, including much that deserves to be called serious scientific investigation.

Assuming, then, that the function of society in moulding child nature is apprehended and is beginning to be understood, and that the responsibility of

society to the child as its ward is granted, we may profitably examine another aspect of their relationship. The child is not only a product and a ward, he is also a *member* of society.

To be a member of society is more than to dwell in a community, enjoying protection and companionship. It is also to share in common efforts and responsibilities.

For example, one who is a member of the state not only passively enjoys the benefits that come to him through the protection that politically organized society gives him, but also does his part as one of the working units who perform the functions of the state. In like manner, one who is truly a member of a school not only receives benefits from the school but also, to the extent of his ability, does the various tasks and performs the various duties which are his part in a co-operative scheme. All this of course is conceded.

It is necessary to observe, however, that the sharing of efforts and responsibilities by members of society is never on equal terms, whatever the gentle evangelists of communism may proclaim. Always there is domination, by whatever name it may be called; and always there is subordination. Therefore, to be a member of society is to be a maker of authority or, on the contrary, to be a maker of face-saving compensations for inescapable subservience. This implication of child membership of society is of pre-eminent importance in education.

When a child begins to "have his way" with playmates, or begins with alacrity to do the bidding of John, or Pete, or Tom, he reveals himself as potentially a master in the scheme of human relations or as potentially a master's man. The earlier a parent or teacher discovers which potentiality he has to deal with the sooner will he be on the right track in guiding further developments of character and mind. Potential master and potential master's man cannot be taught in the same way. The attempt should never be made, and our whole educational system is fundamentally wrong to the extent that it ignores a profound difference. It is not necessarily a disgrace to be somebody's man. If one has it not in him to be a leader or a teacher he should be somebody's man in a useful way, and efficiently. Nor is it inevitably a worthy distinction to be a "boss", political or other. In no case can a given potentiality be wholly converted into its opposite. But the methods followed by youngsters of the masterful type in getting their way may be conditioned and otherwise controlled, and here an obligation of parent and teacher begins.

The diabolical ingenuity of an infant Machiavelli is manifested early. A boy of five dealing with a sister of three gave me this example. One afternoon an unwise nurse brought two pieces of cake into their presence, desiring, I suppose, a favour from them and knowing how to get it. One piece was slightly larger than the other. The boy looked

at them, went to the side-board, obtained a knife, carefully cut the smaller piece into two pieces, and then asked his sister whether she would have one piece of cake or two pieces!

Teachers are well beyond ignorant argumentation over right and wrong ways of handling the boy who gets his way by brute strength or bad temper, or the girl who gets her way by making a scene, but it is still necessary now and then to warn parent and teacher to keep a watchful eye on boy or girl who begins to show unscrupulous cleverness; and beyond doubt it is still advisable to remind teachers to maintain unremitting observation of boy and girl who begin early to get their way by saying in act or word, to playmates, "You would like this; you shall have it; I am generous; I give it up to you; to-morrow we shall be doing something and you will do so and so for me."

It is a legitimate thing to bargain—life consists largely in making bargains. We could not get on without them; surely we could not have social control without them, but between the fair bargain and the bribe the line is not easily drawn. It is one of those delicate things which it is supremely the business of the teacher to scrutinize. The fair bargain is the giving of an equivalent; it is open and above-board. The bribe is essentially this: "You ask a favour of me. I grant it to you; you are my man." When you are grown up it becomes this: "You would like an appointment? Yes. You have the

qualifications? Excellent. What influence can you bring to bear? Very good. Perhaps we can find something for you." Something is found for you, and then you learn what is expected of you. On election day, when the issue is raised between the interests of the man who appointed you and the interests of those who worked against you or were indifferent, you learn whose man you are.

If we do not want the relationship of *beneficium et commendatio* to become the most subtle means of corrupting morals and of undermining institutions that we know of, it is of utmost importance that we watch young children and see to it that in their earliest use of the bargain method they do not cross the line which separates an above-board exchange of favours from the relation of patron and patronized, of tip-giver and servant, of boss and man.

We may happily discover that our child is getting his way, and is beginning to exercise a share in social control by quite another method than any one of those so far spoken of. He is not a young brute or a savage. He is not a bribe giver. He is not clever in the sense of being tricky. Within limits he can have his way merely by being energetic and good-natured. Everybody likes him. He creates an atmosphere of vitality, of liveliness. Unconsciously children about him spontaneously follow his suggestions because they like him, and like to be with him. In such a child we have the possibility of high leadership. He can be spoiled like enough through

vanity, or by indulgence. It is important, therefore, to realize how rare are those leaders of men who have their will and produce results, because, without especially trying or going out of their way, but merely by being naturally superior, and working ceaselessly and generously, according to the initiative of their own minds, they inspire confidence, hold a following and are obeyed.

If there is anything whatever which is inexcusable in educational methods or institutions, it is the killing of any priceless quality of human character or aptitude of mind. To fail to kill off the evil things is bad enough, to fail to develop the average possibility is bad enough, but to kill off the rare things upon which the fullest future progress of mankind depends, is criminal. Parents, teachers, school boards, politicians, society, all share in this guilt when they fail to discover and conserve the child who on the play ground and in all the ordinary affairs of life naturally gets his way through sheer intellectual and moral energy by creating an atmosphere that children about him like to get into, and by making them without conscious effort on his own part eager to help him work out his suggestions.

So much for the methods by which the child who is beginning to participate in social control gets done the things that he wants to get done, through the assistance of other children.

Now, for a moment, let us look at the things that he wants to get done. One of the profound differ-

ences that manifest themselves in democratic communities is the difference of opinion as to what ought to be done by social control through coercive methods, or methods that come very near to being coercive, and what should be left to individual initiative or spontaneous co-operation. One political philosopher tells us that the government is best which governs least. Another tells us that the state should assume responsibility for making human society what, according to some standard which the government accepts, society ought to be. Between these extremes of doctrine we find the people who quarrel with one another as to what things legislatures should deal with and order to be done. We have corresponding questions, of course, in the schoolroom. How far shall coercive methods of discipline be carried? What things shall be done by social control? What things shall be left to the individual to manage as he chooses?

At what age do we begin to take sides in these matters? We surely do not suppose that the typical human being, when he is twenty-one years of age and first goes to the polls, is then only beginning to have ideas as to how far he will try to compel his fellow men to live as he thinks they ought to live? We do not believe that the citizen who says that everybody should be compelled to keep sober, and that prohibition of liquor selling is a righteous compulsion, begins to take this view of social duty when he attains his majority. The boy who in manhood will

hold these views of the legitimate sphere of coercive control betrays infantile preparatory attitudes before he is three and one-half years old. Before he is five years old he begins to instruct his companions in the play-room, and elsewhere, how they should live and behave. And so with the small girl.

There are two classes of children that have arrived at this mental attitude. While some of the child leaders are compelling their fellows, boys or girls, to do as they wish them to do by the crude methods of compulsion and bribery, and others are getting results by methods more refined, in each group there is a subdivision, a cross-classification. Some children wish to carry control over others as far as is necessary for their own purposes, and otherwise care nothing at all what other persons do. Other children enjoy carrying control to the point at which they see their companions becoming like themselves, following their example, accepting their opinions, and playing as they want to play.

What is the reaction of teachers to these two classes of effective children? Is there not a disposition to commend and to reward the second class as "good" children and to assume that they will grow up to be the "good" men and women? I am afraid so; and it is a dangerous proclivity. For these children, unless guided into realization of the relativity and finiteness of all earthly things, are predestined to become those exceedingly bad men and women, the absolutists in morals and politics, who hold that the

end justifies the means. It is of such that the wise French witticism warns, that excesses of virtue are more to be feared than excesses of vice, because not subject to the restraints of conscience.

Must we have a philosophy of this subject in order to be wise teachers of the children who are becoming members of society? Possibly. Should we ourselves take sides and say in every case whether we want all the processes of the law applied to make people good? I think not. But I do think that we ought to recognize and distinguish the children who enjoy standardizing their play-fellows, and the children who are willing to let play-fellows discover some things for themselves and play sometimes in their own way. As to what we ought to do with each of these two classes of children I offer no suggestion but this: I think it is clear that in dealing with the children who are always trying to standardize the little world about themselves, standardizing games, insisting on rules, protesting against departures from traditional ways, we should try to prevent a hardening of habit until it becomes so set and so positive that the child can never see the advantage of differences among individuals, of liberty, of doing things sometimes in new or unusual ways. And in dealing with the other children who do not want to standardize anybody, and simply want to be let alone to observe or to break the rules that were established before their day, we should equally be careful that they do not lose sight of the advantages which may

lie in order, in rule, in tradition, in following the paths, in standardizing.

Summarizing what has now been said I think that I can put my whole contribution to the study of the child as a member of society into three very simple suggestions.

First, we should distinguish between the children who are natural imitators and followers, obedient and willing to be somebody's men, and the children who are natural leaders, instigative, setting examples, taking responsibility, sharing in creating social control. These two kinds of children can be distinguished one from the other before they are four years of age.

Second, among children who lead and take part in creating social control instead of being mere followers, obedient and "nice", we should most painstakingly and conscientiously distinguish between those who get their way by force, or by little forms of bribery, or by clever trickery, and those who get it in some other way. As our most responsible task we should develop to the utmost that priceless element in human society, the occasional children who, without trying, have a following and get their way only because they have vitality, energy of mind, and character.

Third, we should remember that social control is used for a purpose; it is used to standardize, to enforce rules, to make people alike. We should carefully watch our children to see whether on the

whole they are conformists and tend to form the standardizing habit, or show a disposition to break away from tradition, and to experiment. We should see to it not only that the children who want too much liberty shall learn the value of rule and order, but also that those who want to standardize and compel shall learn somewhat of the value of variation, of difference, of experiment, of liberty.

In a word, when we talk about education for citizenship, or social service, or membership in the state, we shall not get far if we study only the problems of intellectual training, and we shall not get far if in studying the relation of society to the child we view society only as responsible and the child only as a ward; or if from any other viewpoint, as for example the psychological, we see the child only as a product of society. We have to study the child as a member of society, and he becomes a full-fledged member of society on the day when first he makes or tries to make other children do as he wants them to do.

CHAPTER XII

THE PUBLIC HIGH SCHOOL

Dispute has raged for more than one generation over the question how far a public school, maintained out of public revenues which come from taxpayers' pockets, should do certain things or neglect them. It has taken a long course of education of the public, including the taxpayers, to establish a strong opinion in behalf of a liberally-conceived and generously-executed plan of public education; but now in a measure that task has been achieved. We need to take care that we keep the aim high, liberal and generous, and do not permit public willingness to fall back into the old narrowness.

Looking at the question from the standpoint of citizens, including taxpayers, it is fairly obvious that while it is proper to use the public schools to equip boys and girls to earn their living, we should expect them also to prepare our young folk to be something more than mere instruments to earn money. Why should one pay taxes to enable John Smith's son to earn money if, when he has learned how, he cares for nothing but to get money in such a way as to make trouble for human society? We might better

spend our taxes in putting him in jail to begin with. Or why should we spend taxes to enable him to steal cleverly enough to keep out of jail? Surely the public high school while enabling a boy or girl (in so far as it is possible to build on what nature has given) better to earn a living, should help to make him or her a worthy member of society and a public-spirited citizen; and the very least that a boy who has had a high school education at the expense of society can do to show that he is a decent man and is prepared to recognize that he has obligations created by his acceptance of the gift, is to be not only decent, but also in some measure self-sacrificing, and willing to give part of his time and his energy to make things go as they ought to go in the community in which he lives.

If there is one place where this consideration is pre-eminently important it is the city. If there is one place in all the world where mere commercialism, or the mere economic aspect of education, should be subordinated to something higher, it is a great American city. We have far too much of other things and much too little of realistic idealism. In American cities in general, averaging them up, only about 20 per cent. of the inhabitants have been born and bred where they now live. About eighty per cent. have drifted into the cities from outside. This means that they have no initial love of the city of their residence. They are in it mainly for what they can get out of it. The average number of years

the citizen has lived in the city of New York is only fifteen. What part or pride, then, have the citizens of New York in its affairs if half or more of them feel like transients? Plainly, if those of us who are city dwellers are to have any feeling of pride in our city or any abiding affection for it we must create these feelings in the minority of persons who are born and bred in it: in other words, in the boys and girls in the schools. So it is fundamentally important that every effort should be put forth to make the boys and girls loyal citizens of the city which is expected to make life in some measure worth while to them.

A second aim of the high school should in all cases be to cultivate a certain virtue which is too sadly lacking in our American life, not only in the city but everywhere, the virtue of intellectual honesty. As a people we Americans are in some ways the queerest that ever lived. We are queer because we have an astounding conception of what it is to be honest or to be dishonest. Probably most Americans want to be honest, and imagine that they are. Probably many of the great rascalities which our newspapers note day by day in the business world are attributable to the fact that half of the business rascals have never been taught to recognize dishonesty when they see it. George Eliot once said that most human beings are incapable of telling the truth although they want to tell it. They see so inaccurately, and they are so incapable of telling

accurately what they have seen, that they cannot tell the truth when they want to. It is a rare man, as observation goes, who is not fooled, or who is not trying to fool others, when it comes to a question of the economic policy of the country, such as the question of the banking system, or the currency, or the tariff, or the scheme of local taxation. In general, it is a rare man who is not either fooled himself or trying to fool somebody else. It is not the American brain that is at fault. American ability is unquestioned, but we have fallen into lamentably bad habits. The work of the school, whatever else it does, should break down these habits of self-deception, of make-believe, of fooling ourselves; it should cultivate habits of intellectual honesty. The question of method will be considered presently.

It should be a third aim of the public high school to cultivate a virtue which next after intellectual honesty we most need in America—the virtue of pride in our work. It is partly because Americans have too little intellectual honesty that they have been losing pride in their work. Does one find it easy to buy an American article that is made of the stuff it pretends to be made of? Does one now see professional men, or merchants, manufacturers, carpenters, or stone-masons, taking the pride in their work that they once took; or does one see them slighting, covering up, offering cheap substitutes, all the way through? It is not a matter of course to see a professional man or a business man who thinks

that he can afford to enjoy the luxury of taking pride in his work. Do we not need by some means to strengthen a feeling of pride in work, to the end that we shall live sincerely and strive for something more than the extra dollars that we could get by doing a thing in a bad way instead of a good? And if we had more of this feeling should we not find it easier in the long run to get the extra dollars as a reward for our toil?

These, then, it is contended, are the rightful aims of the public high school: First, to make generous-minded, loyal citizens, as well as money-earners. Secondly, to make of the earnest, generous-minded, loyal citizen an intellectually honest man, so that he will go forth to look at the problems of the city, the state, and the country with a clear determination not to be fooled and not to fool others. And, third, to see to it that this generous-minded, loyal and intellectually honest citizen shall have pride in his work, so that the things which he builds, whether they be small or great, whether they be material constructions like the public buildings of his town, or thoughts and plans, like the work of the legislator and the administrator, shall be creations worthy in themselves and not mere tricks or makeshifts to meet a momentary situation. We need such citizens, and it is the duty of the public high schools to help us to have them.

The scheme of study in our schools, like the curricula of our colleges, has not been determined by

any careful scrutiny of ends to be achieved by means. Like most human relations, institutions, and devices, it has been determined by our habit of mistaking means for ends, and of working out the means as if they were ends in themselves. We get into the habit of thinking of the curriculum as a thing *per se,* and worth talking about on its own account, irrespective of what we expect to do with it. And this particular kind of means to ends, namely, the scheme of school and college courses, has been made what it is because, for more than a generation past, human interests have been multiplying and differentiating and knowledge has been broadening and deepening in a marvellous fashion. It was because knowledge began to increase beyond all expectations that the old college curriculum of Latin, Greek and Mathematics, and the pretentious nonsense that was called Mental and Moral Philosophy, was broken down, and new subjects were taken in. Because all the conditions of life have changed, we now find demand not only for the scientific subjects, which contended for recognition with the old classical curriculum, but also for commercial courses, industrial courses, and manual training courses.

It is becoming plain, however, that we cannot go on forever determining the study scheme of school and college by the one arithmetical process of addition, as if we never had heard of subtraction and division, and the rule of three. Possibly a little attention to the rule of three (to the elements of

proportion) might now be helpful. The day has come when we must begin to look at the problem in another way. No way has been discovered of adding indefinitely to the years of man's life, and until it is we shall have to determine the scheme of school courses otherwise than by a mere addition of subjects. If we recognize this fact, we are thrown back on the necessity of inquiring, as did the men who created the classical curriculum, what things are most worth while; what will give us achievement of the things we are trying to achieve.

Of all means tried for cultivating the virtue of pride in one's work, manual training is and always has been the best. Working with ideas alone, or with human relations alone in disciplinary measures, does not get quite as far down into the roots of man's nature as working with inanimate things, the qualities and values of which are obvious. The edge is straight or it is not; the line is plumb or it is not.

It is doubtful if any scheme of study has ever been devised in all respects quite so good for cultivating intellectual honesty as the study of commercial relations.[1] Of course not everyone will assent to this presumption. Never mind. The work of a commercial high school properly done should have as its chief product not money but

[1] In some respects the study of the natural sciences is superior to all other disciplines for cultivating intellectual honesty, but in the study of commercial relations there is an historical factor, which, rightly recognized, is invaluable for impressing the mind of the pupil with the practical consequences of self-deception.

morality. It is helpful to remember how the absurd and abominable old way of trying to find out, through resort to ordeal and compurgation, if a man was guilty of a crime as charged, was broken down, and the modern system of examining evidence was introduced. Trying the accused by making him walk blindfolded on a path over which red-hot irons were distributed at irregular intervals, or making him thrust his arm into boiling water, or by bringing his neighbours to testify whether they thought he was a good man or not, worked well enough to suit the mediævally minded. But when commercial cities began to assume importance ordeal and compurgation did not seem to be satisfactory means for finding out what the terms of a contract meant. And so the commercial cities worked out a new way: they turned to the evidence. If we look into the history of Roman commercial law, or the history of English and American common law, as they pertain to contracts, to bailments, and to insurance, we see how men were made intellectually honest, in a degree, by the growth of their commercial relations and the necessity of saying in a contract or other business document pretty nearly what they meant, or suffering the loss of money by saying what they did not mean. Commercial relations should, of course, be studied in connection with fundamental geographical and economic facts, with the actual distribution of the resources of the earth, and with the actual forces at work upon the earth and upon man, determining

his economic condition. These studies properly followed out should have an immeasurable value for the cultivation of intellectual honesty.

What studies are best to cultivate the sense of loyalty, and a generous regard for one's town? Studies in civics, in political science, and in history are admirable; they help. But we must have more than the shell of things which we are bound to get when we overcrowd the curriculum. We must have the reality, the substance, the actual awakening in the boy's or the girl's mind of civic feeling, of the desire to be interested in and to know about the civic relations. And in order to get this reality we might well rely less on formal studies of civics *than on arithmetic!*

If arithmetic were properly taught, no boy could get out of the class room without knowing more about civics than most men know when they go to the polls. The greater part of all our practice work in arithmetic is taken from commercial relations. Problems in multiplication, division, percentage, fractions, and so on, are taken chiefly from business life. Subtly and insidiously, if we teach arithmetic with but one kind of material, we do two things. We not only show the boy how to perform arithmetical operations, but also lead his thoughts along the lines of the material, and perhaps the teaching that we are unconsciously doing will play a much larger part in his life than the teaching that we are doing consciously. Why, then, should we not take a

large part of our arithmetical material from political affairs? Is there any more difficulty in making a grammar school boy or a high school boy in the first grade understand what the statistician calls "standard deviation", than there is in making him understand a promissory note? There certainly is not.

Take a column of figures. Find the average of those figures. That is surely a simple arithmetical operation. Then subtract each one of the items from the average and get the deviations. Then square the deviations, one after the other. Add these squares. Take the square root. These are simple operations. We have found a quantity which statisticians call "the standard deviation." Now, that standard deviation, understood by the teacher as a means of criticizing a column of statistics, will enable him to explain to his class such an important thing as this: The election returns from the states of the Union show one year very much less deviation from the average plurality than usual. The pluralities are nearer the average of the pluralities of a long succession of election years. This means something. It means, in fact, one of two things. Either there is more unity of feeling in the people than usual, so that their actions have clustered closer about a type than usual, or an unusual pressure of some kind has been brought to bear to make them cluster. In this discovery there is something which, if brought to a boy's attention in the course of his

work in arithmetic, will set him to thinking. He cannot help it. And there are hundreds of problems in arithmetic that can be taken from politics, or from the distribution of religious denominations, or from the distribution of wealth, that are equally simple, and for the purposes of practice work quite as good as are the problems commonly taken from business transactions. Any one of them would set the inquiring mind of the boy at work as perhaps it had not worked in all his life. He would see meanings he never thought of before, and he would ask questions that would make us think of things that we never thought of before. It is not necessary to pile up different courses of study in order to teach things that ought to be taught; it is necessary, rather, to select the problems and to get out of each all that there is in it.

Finally, how shall we teach boys and girls to be efficient, and so prepare them to get a living? It is not necessary that we should teach the boy to perform a particular operation; he will find a way to do that if he has learned how to handle himself. He should learn to be efficient in whatever he does. We are here paradoxically reversing the common order. It is usual to regard industrial training as that part of our school programme which is for the purpose of helping the boy and girl to get a living. It is chiefly valuable for the purpose of cultivating the refined virtue of pride in one's work. Commercial courses are for the purpose of helping the

boy and girl to get a living but their chief value is a moral one. The old academic studies are usually regarded as chiefly important in broadening and in making a cultivated person. Their chief value is sometimes to prepare one to get a living.

In saying this, one is not necessarily academic. One evening I had the sensational pleasure of spending several hours with a man who had begun life with nothing and had become a multimillionaire. He had made his money not by refined methods, but by exploiting natural resources as a lumberman and sawmill owner. Having educational problems in mind, I improved the opportunity to ask this question: "What kind of an education ought a boy to have now in the United States to become a successful money maker, without regard to whether he is a good man, or a decent man, or a good citizen?" And this practical person, who had spent his life in rough work among rough men, and had piled up his money, gave me this answer: "Remorseless drill in the Latin language and in the algebraic mathematics!" I said: "What do you mean? Are you a college professor in disguise?" "No," he answered; "I have spent my time in lumber camps and sawmills, in attending lumbermen's conventions, in political lobbies, in all sorts of practical undertakings. I never spent a day in school after I was sixteen years old. At my own request I was taught by a Catholic priest in one of my camps to read and speak Latin. From one of my engineers I learned

mathematics and surveying. I do not know anything about your colleges. I do not know anything about what you call academic training. But I know this: For fifty years I have written or dictated an average of fifty letters a day, and there are business men who do more, and I have discovered that the essential thing for the business men in America in these brisk days is to have a mind trained *to come to the point and to get there quick.* And I have discovered that of all the ways ever invented to train the human mind to come to the point and to get there quick, discipline in the Latin language, as distinguished from English branches, and in algebraic mathematics, as distinguished from mere arithmetic, are best."

In my judgment this unusual individual was more than half right. I should advocate for the purpose of making business men a good deal of the old academic training. For the purpose of making good men let us have much manual training. For the purpose of making honest men, let us have commercial training.

There is more in the old fable of the treasure buried in the garden than we get out of it. The treasure was found, but not in the form in which it was expected. We have fallen into misapprehension of the uses of subjects that we teach. Because it does happen that manual training is associated with the mechanical arts by which men earn bread, we think of it primarily as practical, and it is practical.

But manual training was man's first school in which the moral virtues were trained. We cannot play fast and loose with things as we can with our fellowmen. It happens also that the academic studies have been associated with refinements of the intellectual life, as distinguished from practical things; yet in experience they have proven to be marvellously efficient in developing intellectual power and speed.

CHAPTER XIII

THE UNFIT FOR COLLEGE

The unfit for college are legion, and they need education. What education they should get, and how they should get it, are questions that might be answered practically, to their advantage, if they were not perversely determined to force their way into educational circles where they waste their time and the family money. How to keep them out has become a problem of college administration both serious and difficult.

They cannot be excluded by race, religion, economic class or social rank. They are white, and yellow and brown. They are pagan and Christian. They are wage earners and wage payers, poor and rich, humble and arrogant. They do, however, distribute themselves into categories of personal quality and of habit, and into grades of educability—all below the grade of fit for college; and it is on the basis of these categories and grades that they must be dealt with. Some of them are dunces; these can be picked out by various tests. Some of them are loafers; these can be picked out by the day's work and by examinations. Some of them are intellectual

and social dead-beats. These want the adventitious importance of college associations, but not at the price of exertion. They profess interest in athletics but do not play. They are side-liners and talkers. They could be eliminated by making them row and box until they should gasp for mercy, and they should be. The remaining contingent of the unfit for college is made up of the well-meaning mediocre. These present to the college its really difficult problem.

In former generations the unfit for college did not storm the gates. Now they do. What has happened?

A significant change in the character of the struggle for human existence has happened. A struggle for bare subsistence has become a struggle for importance. There are still starvation and exploitation for the unfortunate, the incompetent, and the deluded; but for most of the millions who in other days were hungry and ill treated there are now food, decencies, pleasures and much leisure.

The struggle for importance was begun before recorded history began. Aggressive and successful minorities fought for domination, and won it. Thereby they inaugurated history. Their offensive was grim and realistic. By comparison, the new struggle of the masses is imitative and exhibitionistic; often puerile and trivial. We hear boastful talk about a "dictatorship of the proletariat", but there has never been such a dictatorship, and there

is no reason to expect that there ever will be. The phrase is a falsehood. The actuality which it is meant to conceal is a personal or minority despotism of an exceedingly low and brutal type, proclaiming communism to fool the proletariat, and fooling it. In actuality the importance-performance of the new rich (lower middle class and proletarian) comprises "conspicuous waste", ostentation, swagger, meddling and bullying. Notice, recognition, compensations for inferiorities, and balms for complexes must be had at any cost. "Tin lizzies" must be driven past limousines on the road to show that it can be done. Limousines, pearls, and summer furs must be bought to show that they can be. Mediocre boys and girls must be sent to college, to show that they can't be kept out. The urge, no less than the impact, of the struggle for existence has changed. The hunger pangs of the empty belly are in great measure superseded by the swelling pains of the big head.

The infancy of the newly-important majority of mankind has been unimaginably prolonged. Remembering John Fiske's theories let us hope that this fact bodes well for our race. At last, however, the human majority is intellectually and socially adolescent; and in nothing are adolescents more adolescent than in their intellectual and social reactions. Their instincts are maturing, but their ideas are infantile. They are restless with impulses of manhood, but they think and speak as children. Incompetent to choose and to plan in matters of education,

they are determined to have their own willful way in education if in nothing else. This is because they will on no account acknowledge (or it is the last thing they will acknowledge) that some men get on faster and in the end get further than others, by reason of superior native ability. The intellectually and socially adolescent attribute success to advantages, namely: money, surroundings, influence, and above all education. Their faith in education, or rather in what they suppose education to be, approaches credulity. And the substance of education, as they conceive it, is a mysterious "medicine" or "mana", not of knowledge or of skill, as you might suppose, but of gentility, hitherto monopolized by college-bred sons of the privileged classes. The offspring of the masses let it now be understood are no longer to be patronized and defrauded as recipients of technical training invented to keep them forever in a manual labour class. The rebellion of the poor of New York City against the Gary schools was a social, not an intellectual revolt.

The intensity of the pressure of the mediocre and otherwise unfit for college to "get in", and the extent to which colleges and universities have yielded to it, are not realized in America or elsewhere. When years ago Dr. John W. Burgess said that one-half of the men and women who constitute our university student body are only "hewers of wood" he angered the sentimentalists, which was something to be glad of; for the sentimentalists have become not

the least of our public nuisances. The description was not inaccurate and not unjust.

Some time before the great war we were warned that abundant educational provision in Germany and France, which was being duplicated or outdone in America was creating an "educated proletariat". Society, we were told, was being oversupplied with doctors of philosophy, masters of arts, doctors, lawyers, and clergymen. In all the professions, it was said, one-third to one-half of the practitioners were unsuccessful, as judged by any common-sense standard.

Like every other warning ever offered to Americans from the experience of other peoples, this intimation that we could have "in our country" too many college and university men, was smiled at, with that ancient smile of ineffable self-satisfaction which always overspread when economic "theorists" offered curious items of information about Continental experiments with paper money or Great Britain's method of developing an ocean-carrying trade.

It may be that we have passed the callowest years of our boasting and smiling, and that supermoron Americans are now ready to admit that in the Western Hemisphere the laws of the physical universe, the principles of logic, and the rules of decent behaviour are, after all, like those that have prevailed for some thousands of years on the other side of the Atlantic. If the similarities (or identities)

are real as well as admitted the matter is serious, because to the extent that colleges and universities encourage the hewers of wood to attempt to live by professional activity, they are guilty of misleading, and they inflict great injury upon the community.

The plea sometimes urged that colleges should acquaint these intellectual weaklings with things undreamed of in their local communities is disingenuous. Without the college or university stamp inferior but pretentious men and women would be known among their neighbours as egotists, cranks, and bores. They could never impress anybody or deceive anybody with a show of the authority of learning or of professional equipment. They would pass at their real value.

A different plea, also sometimes urged, that colleges and universities cannot without great risk of injustice attempt to identify and exclude twenty-five to thirty-nine per cent. intellectuals is not less disingenuous. There is an infallible test of self-important inferiority. From their earliest days men and women of this grade disclose the trait that dooms them to non-success in life. They expect to leap into fame and prosperity by a feat. They will make a great discovery, or invent the most wonderful machine ever, or write the incomparable novel. But they will not take, one by one, the steps of hard application and drudgery by which alone substantial attainment is reached. The particular bit of work that is assigned or offered them to do is always

"inferior" or "uninteresting". They are fit for something "better". Whatever the task that lies before them it is insulting, or at least "hard luck" that they should be "up against it". "Something else", always something else, would be the right thing for them.

Not only every teacher but also every successful business man, every successful editor and publisher, every mill superintendent and every farmer who makes his farm pay, knows this variety of human kind. It is one of the most discouraging actualities that those who are doing the world's work have to deal with.

It will be said, perhaps, that in the inferior half of the student body there are individuals who are conscientiously hard-working and ready to do faithfully any task assigned them, but who are hopelessly stupid. Without denying that there is a small percentage of such persons in our universities it may be asserted without fear of disproof that it is small. Conscientious dunderheads with few exceptions are weeded out of the educational ranks in the preparatory schools or in the first college years. Those who get by are usually fakers.

Yet we are agreed, I suppose, that the unfit for college need education, and need it desperately. What education within their comprehension should they have?

The best answer to this remorseless question that I have seen is offered in a little book on *Four Essen-*

tials of Education by Dr. Thomas Jesse Jones. If I may quote from a preface which it was my privilege to write for it the four essentials are:

(1) Knowledge and mastery of hygiene and health; (2) Knowledge and mastery of the resources and opportunities, in particular the agricultural and climatic ones, of the local physical environment from which a community must obtain its livelihood; (3) Knowledge and mastery of a decent and comfortable domestic life, without degradation or exploitation of women or children, on which race vitality and advancement depend; and (4) Knowledge and mastery of the art of recreation in a broad meaning of the word, the art of creating a sane and elastic personality, self-controlled and poised, serene of mind, and capable of happiness.

Accepting these four essentials as basic for any education, whether of mediocre folk or of the gifted, I would describe them somewhat differently and present them in another order.

All human beings not mentally deficient should be taught and should know how to enjoy life. Life has no significance unless on the whole and in the long run we enjoy it; or others, because of our living, enjoy it. I need not repeat here the hedonistic argument offered in the chapter on "A New Liberal Education". To enjoy life, however, we must live actively. Pleasure that we merely expose ourselves to and self-indulgently accept soon cloys. We must do things, we must achieve, and this means that we

must work. We must work earnestly, faithfully, systematically, and productively. The foundation training in the arts of recreation should be laid in a mastery of work and in duty performed, but not in joy-killing drudgery. Never should those undergoing education be permitted to lose sight of enjoyment, individual and shared, immediate and capitalized. Never, when such fate can be prevented, should they be allowed to become indifferent to the joy of activity, to the joy of creation, to the joy of change and variety, to the joy of comradeship. For these joys we live.

To safeguard and facilitate active life and to augment happiness all men and women not mentally deficient should be taught and should know how to keep themselves fit. They should know the arts of hygiene and of sanitation, the arts, that is, of health. They should be taught and should know how to keep their families and their households fit, conserving womanhood and childhood. They should be taught and should know how to keep their communities fit, conserving community pride, developing a sense of community responsibility, and increasing community well-being. And they should be taught and should know how to keep their environments fit, understanding and conserving local resources, and developing local potentialities.

As tools to use in the acquisition of this basic education the three R's are necessary. Neglect of them is fatuous, and a current notion that such as need

them can be trusted to acquire them casually or incidentally, will not bear examination. All mankind should command them, and a majority of mankind will get them only under pressure.

It will be said that the account here set forth of the unfit for college, and of the education proposed for them, amounts to a contention that colleges and universities are for an intellectual aristocracy. *It does;* let no one be deceived about that. And it will be said that democracies dislike intellectual aristocracies as deeply as they dislike aristocracies of birth and wealth. They do; let no one be deceived about that, either. And when so much is admitted, let one further thing be said. Unless democracies cease to distrust intellectual aristocracies and learn to walk respectfully, albeit self-respectingly, with them, the days of democracy and of civilization are numbered. We shall go back to a life of rudeness, or we shall restore monarchies and aristocracies which, with all their sins and errors, at least understood the difference between civilization and barbarism.

CHAPTER XIV

WHAT THE COLLEGE GRADUATE SHOULD KNOW

KNOWLEDGE is not the only thing that the college student should get in his undergraduate years. When graduated he knows this if nothing else. Men of exceptional ability and of distinction tell us now and then that they remember but little of what they read in textbooks or were told by instructors, but that in college they made acquaintances, acquired intellectual interests, and developed human sympathies that they value increasingly as the years pass.

Nevertheless, the college graduate should have accurate and attested knowledge, and he should not lose his command of it. He should take with him into active life a considerable amount of what he has found in books and has been told by teachers. Whether he does or not depends on what his mental reactions to it were. If he thought about it and asked questions about it, he retains it in good measure, and uses it. He would retain and use more if he had been required to study more, think more, and talk more, and sit in recitation rooms less.

It is not, however, the staple knowledge of curriculum subjects that I wish now to speak of. There

is other knowledge, not much talked about, which college boys and girls should be expected to master. Usually they do not, if my own sampling of their equipment is indicative. Working for and with bachelors of arts and of science who have come to the university for higher degrees, I have been shocked by their deficiencies. Men and women of real intelligence, ambitious and industrious, have come from college handicapped for life by sheer ignorance, not their fault, and the number of such has not been small.

I will be specific, and will name five things, all of them important, which the college graduate should know, but which too often he does not.

First, the college graduate should know his own language well enough to use it accurately and without awkwardness. The contention that this knowledge is unconsciously acquired by association with cultivated persons is not borne out by observation. Hard work is necessary. The right word to express a thought with precision cannot be selected without familiarity with etymologies, which one does not get at teas and receptions; and straightforward sentence-making is impossible without attention to those elements of logic which long ago became identified with simple grammatical forms. The exercise of parsing was valuable, and I believe that an unfortunate mistake was made when it was given up. The written work of graduate students, not only that which is hastily perpetrated, as examination

papers are, but also themes and dissertations, abounds in preposterous errors.

Second, the college graduate should know what the important works of reference are and how to consult them. No human being can carry in his head all the factual material, including dates and statistics, which from time to time he may have occasion to use; but he should know where to find it, and how to distinguish trustworthy from untrustworthy compilations. As my observation goes, the graduate students who are familiar with encyclopædias, yearbooks, and files of journals, are the exceptions. When assigned a bit of actual research work they have no idea how to begin. By good luck I had the encyclopædia habit before I went to college, but while there I did not meet any one else who had it. I was to realize its value when, later on, I took up the work of journalistic writing and editing.

Third, the college graduate should know what literature is. He should know, that is, what writings conform to standards of taste, are felicitous in phrase, are illuminated by imagination, and are dynamos of power. He is not likely to have this knowledge if "literature" as a college subject has been made a task. The college man or woman is enviable who has been given carefully prepared lists of books, with no assignment beyond a mere hint to browse in them at will.

Fourth, the college graduate should know what history is, in two current meanings of the word.

History is, first, a sequence of experiences—adventures, hardships, tragedies, and achievements—through which mankind has passed. It is, secondly, a record and story of that sequence, scrutinized and checked up. The college student should learn something about the methods of scrutiny and of check-up (the process of historical criticism so-called) and of its results. The subject is interesting, and only a poor teacher can make it repellent. Then the student should follow the story as checked and interpreted. He should get the sweep and the thrill of it, and enough understanding of it to see, in part at least, the relation of past experience to human experience now. He should learn what, of importance, is known about prehistoric man. He should learn the stages of material culture, and the history of religious ideas and rituals.[1] He should learn how barbarism emerged from savagery, and civilization from barbarism, as disclosed by archæology and survivals of culture, including rituals and other folk ways. He should learn in what essentials western civilization to-day differs from ancient Mediterranean civilization, and from oriental civilization. Unless when he is graduated he knows these

[1] The history of "the great religions", so called, often taught in college does not meet this requirement. Far more important is knowledge of the earliest manifestations of the religious attitude and of primitive religious ideas, especially the primitive ideas of contagious supernatural power (mana, virtue) of magic, of spirits, and of propitiation. These ideas (presented in Chapter III) are the key to any real understanding of later religious developments.

things he possibly cannot and he probably will not be a man of light and leading in the educational or the political life of his time. At best he probably will be a politician.

Lastly, the college graduate should know what science is. More often than not he supposes that it is just a lot of "formulas and theories" ranging in certitude from mechanics, thermodynamics, electrophysics and chemistry, to "eon-geology" and Darwinism. This is ignorance, and is discreditable. To know what science is, is to know, first, what the aims and methods of science are, and secondly, what scientific men think about the two chief intellectual interests of the human mind, namely, the nature of reality, and the nature of the process through which the world in which we live has come to be what it now is, and we ourselves to be what we now are.

The aims of science are two, and two only. They are, first, to determine what supposed facts, or alleged facts, or guessed at facts, actually *are* facts; and second, how facts are related to one another. This sounds almost childishly simple; but simple, easily stated purposes, are not always easy to achieve.

The methods of science are three, and three only. These also can be stated simply, without using technical words or impressive phrases. The methods, then, are, first, observation and experiment to obtain data; second, a statistical distribution of data to

account for them *all,* not only those that fit into a generalization, but also those that do not, and to exhibit the ratio of the exceptions to the rule, i.e., of the variates to the mode or type; and three, verification, or check-up, by countless repetitions of observations and experiments, and by new ones. Alleged science which disregards, or has disregarded, any of these methods is not truly science. It is pseudo-science or quackery.

The method most frequently neglected or deliberately disregarded by overconfident theorizers and by charlatans who exploit the credulous, is the second. Careless and dishonest workers pick and choose the data which support a theory or contention. The theory or contention may be true, or probably true, but careless and dishonest generalizers do not themselves know that it is. The measure of probability here is the ratio of the exceptions to the rule, as the data run. It is possible that if the instruments with which we observe and experiment were unimaginably more precise than any we so far have, we should discover that there are always exceptions to our generalizations and that our "laws of nature" are not strictly certainties but only such extraordinarily high probabilities that we may call them certainties for practical purposes. The laws of behaviour and of societal change, in which the sociologist is interested, are probabilities.

How do scientific men think of reality? How do they conceive it? Again, simply, as they think of the aims of science and of its methods. For scien-

tific purposes, as for their own practical purposes, they understand and mean by "reality" whatever is apprehended and affirmed by sense perception and by reflective thinking, conjointly, each checking the other. By reflective thinking they understand and mean what in psychology is otherwise called "conceptual thinking", and in common speech is called "reasoning". It is a logical adventure, and affirmations arrived at by logical adventure unchecked by sense perception are at the best speculations, and often are but fantastic delusions. Affirmations of sense perception unchecked by logic or by experiments instituted by logic may be illusions, like the familiar illusion that our train is moving, when in fact it is the other fellow's train on the next track that is under way. Holding by his idea of reality as the coincidence of what is perceived with what is thought, the scientific man always views the real as concrete, and never, as the speculative philosopher so often has viewed it, as abstract.

How do scientific men think of evolution? Once more, the answer is, "simply". They understand and mean by the word one or another of three sequences of change, namely: one, an emergence of order, definiteness, and organization out of turbulence, or chaos; two, a special case of such emergence, namely: a descent of variant species of organisms from a common ancestor less highly organized than they; and three, a special subcase of case two, namely: the descent of man from an anthropoid ancestor.

The general process (one) is seen in the inorganic as well as in the organic world. An example is the growth of crystals, as of snow or frost in vapour, or of sugar or alum in a solution, or of gypsum or of salt in sea water. It is seen also probably in the history of stellar and planetary systems. In the organic world it is seen, as a much more complicated process, in the development of the individual plant or animal from fertilized seed or ovum. It is seen in the historical development of human society. Attacks on the doctrine of evolution rarely go as far as to deny the general process. The facts are too obvious. It is even safe to "allow" that infants of the human race become children and children become adults through a developmental process, in which more than increase of size happens.

The scientific view of the derivation of species, and of the descent of man is an inference, and neither a mere speculation nor a dogma. It is drawn from an impressive and continually increasing mass of evidence, anatomical, physiological, embryological, and palæontological. The challenge to anthropologists to produce "the missing link" has been met by the discovery of an entire series of ascending kinds, Pithecanthropos, Piltdown man, Heidelberg man, Neanderthal man, Cro-Magnon man. The college graduate should know this evidence by actual sight and handling, if not of original dissections and "finds", at least of casts and photographs, which are excellent and abundant.

CHAPTER XV

WHAT THE COLLEGE PRESIDENT SHOULD KNOW

The man who knows not that he knows not aught
He is a fool, no light shall ever reach him.

Who knows he knows not and would fain be taught
He is but simple, take thou him and teach him.

But whoso knowing, knows not that he knows,
He is asleep, go thou to him and wake him.

The truly wise both knows and knows he knows,
Cleave thou to him, and never more forsake him.

From the Arabic.

PRESIDENTS of small colleges which serve American denominationalism as educational institutions have rather too frequently been specimens of the third psychological genus identified by the Arab, and much too frequently their slumber has been shared by trustees as heavy-lidded as themselves.

Our first avowedly undenominational small college was Union College at Schenectady. Eliphalet Nott, for sixty-two years its president, from 1804 until 1866, was never accused of somnolence. In the eyes of his calumniators he was perversely alert. He was interested in physical science and in the moral regeneration of young men condemned at other institu-

tions in advance of Judgment Day. Detesting coercion and distrusting it, he blazed a trail for John Dewey, not then born. In 1809 he introduced modern languages into the curriculum, and in 1833 a scientific course. In 1845 he made room for instruction in civil engineering on lines approved at West Point.

Since 1866 a measure of independence has been enjoyed, attained, or proclaimed by a dozen or more small colleges, and two or three of them have won into the vanguard of respected educational innovators. From their executives the curious in such matters may learn what a college president "on the job" should know and know that he knows.

These executives and their co-efficient colleagues in faculties and boards of trustees *know what is going on,* as editors of important newspapers and magazines know. They have been industrious, and they do not cease to learn. More things are happening than were happening in Dr. Nott's time, in domestic politics and in international relations; in big and in little business; in philanthropy, in social work, and in education; in rebellions against conventions and taboos in art, literature, and morals; in ground swells and upheavals of popular unrest and revolutionary turmoil; in exploration and discovery, and in the reconstruction of history, science, philosophy, and religion.

No man living knows or can hope to know everything knowable about more than one or two of these

goings on, but many educated men know them as actualities, and know that every one of them has been exhaustively studied by individuals whose qualifications are known, and who can be called on for trustworthy information. Perhaps no college president in the land would wish to have undergraduates made acquainted with all disturbings of human peace, indiscriminately. That is a question of expediency, or, rather, of wisdom. But there is no respectable reason why the president himself should not know them and the direction in which things are moving. He *should* know.

Moreover, and this is important, he should *know* and not guess, or rest content to accept unverified asseverations.

In a group gathered about a seminar table was the president of a denominational college, present as a candidate for the doctor's degree. He defended legislation forbidding teaching of the hypothesis of evolution. These questions and answers followed:

"What is the hypothesis of evolution, as you understand it?"

"That men are descended from monkeys."

"Do you get that idea from Darwin's *Descent of Man?*"

"I have never read Darwin."

"You have read the New Testament?"

"Yes."

"When the mustard seed had grown into a tree so big that birds could lodge in its branches, had

anything occurred which biologists might call evolution?"

"I think not, but I have not studied biology."

"What about the evolution of a snow crystal on a window pane, in a frosty night?"

"That is not evolution?"

"Would Herbert Spencer have said that it is not evolution?"

"I don't know. I have not read Herbert Spencer."

Here was a curious product of safeguarded education, a college president who wanted to have it known that he did not believe in the hypothesis of evolution, and that he didn't know what it was that he didn't believe in! Happily, he was not a congenital fool. He had only been drugged, and presently he came to. He is now thoughtfully an evolutionist, but no longer, I regretfully report, a college president.

It is when he undertakes to assure himself that his knowledge is not spurious that the wise man begins to know that he knows. Until then he is little better than half awake. He can be deceived and he will deceive himself. Not discriminating belief, probability and certainty, one from another, he mistakes wishful thinking for factual thinking and rash generalization for affirmation within limits of error. In wide realms of the unknown and unknowable we walk by faith (and humbly if we are wise) but when we take belief for knowledge, above all

when we pass it off for knowledge, we head for the pit.

To know that we know—to make sure that our knowledge is what we presume it to be, we must know *how* we know. Every educated man should be familiar with methods of verification, even if he has not mastered them. If he does not know what they are and how they proceed he is not substantially educated, whatever his accomplishments and fluencies may be. Verification proceeds by a tireless repetition and refinement of observations, measurements, comparisons, and experiments under increasingly strict controls. The chemist repeats his weighings, the engineer his triangulations, the experimental biologist his breedings. In the physical sciences verification is a comparatively simple business, although tedious. In the realm of human interests it is difficult and costly. Methods are imperfect and results are crude. When numerical data are available the statistician, calculating the probable error, can tell us what is the limit beyond which they are untrustworthy. For non-quantitative data (human testimony above all) we have at present no scientific measure of trustworthiness. We know only that such data should be discounted heavily. This item of inexact knowledge is unsatisfying but nevertheless practical. Educators, uplifters, and reformers should walk warily in the light of it.

What is going on will be an increasingly large

part of what the college president should soundly know, but it should never be all. He should know also "the things that remain", unimpaired by change.

Our heritage of culture is immeasurably vast, and it is a mixture of evil and good. Some of it, poisoning the moral air, is worse than the withered fig tree, which only cumbered the ground. But there are things that remain which enrich our lives with beauty; the broken column, the mullioned window, the crumbling wall, ritual and romance, and graciousness in human relations. And there are things that remain which move us to care greatly for integrity of mind and clarity of thought, for serenity of spirit, and for fortitude of soul.

The college president should know the frontiers of knowledge and move forward with them. But also he should know the background of human values, which do not change with time. He should know that he knows them, and his students should know that he knows.

CHAPTER XVI

THE EXPERIMENTAL WAY

It is a habit of the human mind to utilize one word to convey more than one meaning. We seize upon resemblances, trivial, amusing, or important, and fix them in consciousness by tagging them with the same verbal sign. The procedure is a simple case of inductive logic, and a word of double meaning is therefore often a record of significant experiences through which the race, in its evolution, has passed. Among such words, "speculation" and "speculative" are exceptionally suggestive. To speculate is to spy out and behold. Therefore it is also to contemplate; to look into; to pursue or spy out truth by reasoning. But truth is by no means the only thing that man curiously looks into and tries to spy out. The usual man is more interested to spy out opportunity, and commonly the operation is one attended by risk. Consequently it comes about that to speculate is ". . . to invest money for profit upon an uncertainty; to take the risk of loss in view of possible gain."

So the business man and the philosopher both speculate. Have we not here something either philo-

sophical or practical, or perhaps both practically and philosophically worth spying out? What is it that business speculation and philosophical speculation have in common?

One common element, obviously, is belief or faith, in distinction from knowledge. In both cases the mental operation is the projection of reasoning, good or bad in quality, as may be, unchecked as yet by sense perception. Philosophers and investors alike are taking risks which may or may not return a profit. Belief, then, in distinction from knowledge, is the psychological element common to both kinds of speculation.

In keeping with the common psychological element is a practical element. Philosophical or economic speculation is essentially credit; it is an obligation; it is not cash. Unless it is paid up sooner or later in the hard cash of fact, in sense perception, or in material goods, it is wasted effort, wasted wealth.

Our spying out of this subject may profitably go one stage further. There is a sense in which coin money is essentially a form of credit. The European War reminded the world, as it was reminded thousands of times before, that even gold and silver avail nothing in situations where it is impossible to buy with them the concrete goods imperatively needed. The economist long ago discriminated money wages from real wages. The labourer's wages may be advanced twenty per cent.; but if the prices

of the necessaries of life advance thirty per cent. he has not gained, he has lost. In the realm of ideas, as in the realm of business, there is a coin circulation which ordinarily passes in discharge of obligations, but like money of the market, it is worthless unless convertible into concrete satisfactions. The coin circulation of the mind consists of that stock of traditional ideas and alleged truths which commonly we accept without question. In a measure they have been verified by experience, but from time to time they are challenged; and when challenged, they must make good one hundred per cent., or be discredited. And the concrete payment into which they must be convertible is sense perception.

We are now in sight of a suggestion in educational theory. Science is a double-entry bookkeeping. Speculative philosophy is a single-entry bookkeeping. Speculative philosophy makes up its account of the universe in terms of ideas only. Science makes up an account in terms of ideas and another account in terms of sense perception, which may be over and over repeated, and the two accounts must agree.

The exploitation of ideas has been as necessary a process in the development of civilization out of barbarism as has the exploitation of sense observation; and the recording of ideas and observations in books has been as necessary for the growth of knowledge as either perception or thought. He is a

man of narrow vision who would forbid speculation in the economic world because it may yield nothing but loss, or object to philosophical speculation because it may lead nowhere. He is a one-eyed man who can see only the value of books; and he is a man with only the other eye who can see only the value of skill, ingenuity, and precision in sense observation.

In the university and in the theological seminary we may well leave the mind free to project its vision, to speculate at will. In the technical school we may hold the learner to hourly contact with physical forces and material things. But in school and college, in that general work of education which we plan for the average individual, to fit him for worthy and successful living, we should first keep within that empirical realm which is made up of the ideas, the sense impressions, and the motor processes that are interconvertible, and second, within this realm, we should develop a double-entry education.

We should train the senses and require practice, thorough and long-continued, in the use of instruments of precision, in observation and in creative work. Thereby we should keep the mind in close touch with actuality, and enrich it with the content of fact. But there we should not stop. We should also enkindle the love of romance, and reveal the visions of possibility and of beauty that we call literature and art. We should teach the uses and the niceties of words. We should develop, so far as

we can, the power of purely intellectual analysis, and we should open to every mind the treasure house of ideas, the accumulations of the generations of human experience. So should we make men, equipped and trained to lead the lives of men; not workmen only, or dreamers only, powerless to convert their dreams into concrete realities.

The effective means or procedures of double-entry education are at least four in number. All are empirical; all have been tested and have "made good". Men that have profited by any one of them know its value, but too often they are ignorant of the value of the other three. Therefore, we have endless contention over educational programmes.

First in time and most simple in character is the making or producing of something. To make a stone hatchet, or a bow and arrow, a hut or a canoe, a web of cloth, or a water jar, a pair of shoes or a coat, a plow, a sailboat or a steam engine, to raise a crop of oats or rear a herd of cattle, is to call forth every major reaction of the mind, and, in a degree, to train all its powers. It demands ideas, and a more or less free arrangement of them in the coherences that we call patterns. It demands also accuracy of sense impression and of motor adjustment; and it is a process in which, at every stage, idea, sense perception and motor reaction are and must be interconvertible.

To obtain this result, however, the thing made or grown must be a complete and functioning thing,

not a mere part of a whole which is never seen entire and in operation. It must emotionally be wanted and imaginatively be foreseen and planned. It must be discovered in its sources and circumstances, be assembled in its materials or elements, be constructed or grown, and finally, it must be made to "go" or otherwise to satisfy, and must be approved or condemned by the judgment as it "works" or does not work. This synthesis is educationally vital, and it is the standard by which to measure the value of any given scheme of manual training or vocational guidance. In earlier days artisans, practical manufacturers and practical farmers were often well educated men, although they had enjoyed little schooling. In making or growing complete things, adequate to foreseen uses, their minds were normally developed. In highly specialized modern industry the worker produces only a relatively insignificant part. He gets only the vaguest notions of sources, completeness and ultimate adequacy. To reproduce in the school shop these educationally worthless or worse than worthless modern conditions, instead of the earlier ones that had a sterling educational value, imagining that in so doing we are "practical" and "advanced" is to be absurd to the *n*th degree.

Nearly as early in time, and but little less elementary in character than double-entry education by creative work, is the practical education that we get through relations with fellowmen. The keenness of sense and the precision of judgment that the appren-

tice may get in the shop or the farmer's boy in the field, the newsboy may obtain in the street. The successful detective relies on his working combination of observation with conjecture. The business man who gets on spends his days, as we have seen, in maintaining the interconvertibility of speculation with concrete facts of sense. So also, to an extent not always justly measured by a cynical press, does the practical politician, who works his way up from the duties of a watcher, or of humbler service, through district leadership to responsible power. Grudgingly or admiringly the world accepts the self-made man as in a way educated. It has to acknowledge that he is trained in perception and in understanding, if not in literary tradition or in convention.

We are not permitted to forget, however, that street and mart, with the aid of the "district", deliver to us also as characteristic products the gangster and the heeler, the parasite and the grafter. If the manipulation of material things is inadequately educative unless it is seen as part of a larger process culminating in the fulfillment of a purpose, so is social "mixing" inadequate, or worse, unless it is part of a process of "getting somewhere" worthwhile. To obtain the double-entry education through social experience one must belong to organizations that function as agencies adjusting means to ends, and which, therefore, striving for collective success, penalize individual inefficiency. And obviously, if social experience is to develop not only

efficiency but also social vision and a sense of responsibility, the organizations to which one belongs must be comprehensive and of high purpose. We arrive here at recognition of the supreme educational value of citizenship, as it was conceived by the Greek, as we moderns must learn to conceive it if democracy is not to fail. Citizenship is not fulfilled in the enjoyment of state-created privileges while the defense of one's country is left to hirelings or to volunteers. Citizenship includes a sense of obligation, and a personal preparedness to take one's individual part in any emergency. A part of that preparedness is military training, and in human history thus far military service has been the one effective means of creating in the average human breast a sense of complete self-giving to the commonwealth, and of actually bringing the average heedless individual to "keep his rifle and himself just so".

The remaining ways and means of training sense and thought in effective interaction are (3) the creative pursuit or the critical study of literature or art, and (4) scientific investigation or the systematic study of natural science. No contribution is offered here to controversial literature upon the relative values of these supposedly unlike ways and means, beyond the remark that they are less unlike than most of the disputants over them assume, and that any one of them misused or used inadequately may as grievously disappoint as manual training or social mixing may.

Protagonists of education through the observation and handling of material things usually single out "literary" studies and the "literary method" as representative of a schooling that neglects to train the senses. The assumption betrays a curious failure of observation. A study of anything through books only, of course, neglects sense training, but the method is no more fatal in literature than in science. Neither literature nor art can live, any more or any longer, than natural science could live, if not continuingly fed on observation of the material world. Moreover, to understand literature or art, as to create it, one must know at first hand through individual sense impressions the concrete things depicted; the shore and the sky, the marsh and the mountain, the crumbling arch and the crowded street, the struggle for existence, in mill or mine, in market or forum, on field or battlefield. And only as expression in word, or form, or colour, is over and again brought face to face with sense impressions of the "material" expressed can we have standards or judgments in art or in letters. Cubism and Futurism, like speculative philosophy, may stimulate intellectual motility, or reveal new possibilities, but in themselves they are no more art and literature than speculative philosophy is science.

He is an exceptionally favoured man who has profited by all of the ways of double-entry education. To have learned and been disciplined through making things that "go" or "work"; through effec-

tive co-operation with fellowmen; through the patient study of expression, point by point with observation of the content supposedly expressed; and through a not less patient examination of the content of knowledge and of our inductive methods of organizing it; this is, in truth, to be educated. But in realizing so much let us not fall into the deplorable error of concluding that every boy and girl in school should be "put through" a curriculum compounded of these four programmes in vain expectation that he or she will so obtain a "broad" or "rounded" education. By this error our up-to-date public schools have been made absurd, and too often next to worthless. Not every boy or girl can profit by as many as two of the four programmes, and the pupil who can thrive on them all is highly exceptional. Our business in the public schools is to see that every boy and girl is awakened, disciplined and carefully trained in perception and in thought, by at least one procedure, and by acquaintance with at least one kind of material. If then, in addition, he or she presumably can obtain something worth while from other material and through another educational experience, let the hopeful experiment be tried.

CHAPTER XVII

THE PRESENT DUTY OF THE INTELLECTUALLY HONEST AND UNAFRAID

It would be a deplorable case of wishful thinking to expect that the conflict between occultism and natural knowledge will be fought out on the uplands of scientific theory. It will drag on for generations in the fens of ignorance and moronism. No iniquity, humbug, or absurdity has died so lingering a death as occultism will die, if it ever does die.

The first duty, therefore, of the intellectually honest and unafraid is to enlist for personal service and "for the war". It will be an unfortunate mistake to assume that successful hostilities can be carried forward by a paid army while gifted investigators devote themselves to their researches, in serene assurance that all goes well.

The imperative second duty it to safeguard children whenever it can be done against occultistic teaching. The argument of Chapter II need not be repeated.

The third present duty of the enlightened who are honest and unafraid is to learn how to fight effectively against the kind of enemy that has to be faced.

Without prostrating themselves before that old devil, the serpent, they must learn wisdom from the serpent and the wisdom of the serpent is subtlety. The defenders of natural knowledge must acquire subtlety without insincerity, and if they haven't learned what the difference is they must learn it soon. Aggressiveness, under circumstances where aggressiveness can mean only defeat, with willingness to suffer martyrdom for the cause, is a waste of energy and courage not to be afforded.

Put in other words, all this means that the occultist must be reached through his self-interest, not through his intelligence or his moral sense. He no longer hurls himself against physics and chemistry, because he has learned that these sciences give him things that he can appreciate and which he greedily wants. They have given him automobiles, movies, and radios. They have given him dividends, and he looks to them for more. By similar appeal he must be reconciled to biology. He must be helped to associate biological research with improved varieties of roots and grains and fruits, with better breeds of domestic animals, and with an increasing control of diseases which attack crops and cattle and human beings. If he is not antagonized by *talk* of evolution he can be interested in it as *obvious fact* and, without knowing what is being done to him, be won over to a naïve acceptance of it. He will not object to watching what happens in a plot of ground thickly sown with seeds of many

kinds and left to itself. Presently he will discover that of the plants which have germinated, many die immediately, others from day to day and from week to week until perhaps only less than half of those that sprouted survive through the season. Actually seeing the struggle for existence and the survival of whatever individuals are suited to the circumstances of their life, he will get the idea of natural selection without having to be told about it. He can be shown the differing but suggestively similar anatomical structures of a great number of animals. He can be shown the resemblances in their physiological functioning, and he can be shown the embryological development, through resembling stages, of animals in great variety. If out of this experience he does not find himself asking questions, speculating, beginning in a simple way to be an evolutionist because—well, he doesn't know why, it is a waste of time and effort to try to teach him. Predestination turns out to be the one true dogma of his creed. By these methods and these alone Western culture, so called, after countless failures, has begun to get itself taken seriously by millions of so called "heathen" upon whom early missionary efforts to convert them to Western theology were largely lost.

Fourth and finally, it is the duty of the defenders of natural knowledge to make sure that they have cast occultism altogether and forever out of their own hearts and minds. Tens of thousands of them have not yet done so. They have never earnestly

tried or they have ignominiously failed to break through the thought-tight compartments of their intellects. Like Michael Faraday, they shut the doors of their laboratories when they go into their oratories and shut the doors of their oratories when they go into their laboratories. There should be no harm in this; it might, indeed, be an excellent practice, if they could discriminate the different orders of mystery. To acknowledge that ultimate mysteries of material existence, of life, and of conscious experience, are unfathomable, is a reasonable and decent behaviour, but to go on attributing to supernatural causation phenomena from which mystery is being banished is inexcusable. Vitalism in biology is a case in point. To say that life has never yet been accounted for in terms of chemistry, ionization and so on, is one thing. To pretend that you account for it by assuming a mysterious, non-natural "vitality" is to fall back upon obscurantism. The intellectually honest and unafraid must be willing to say that they do not know when they do not, instead of inventing a knowledge that is not knowledge.

Steadfast performance of these sane duties by the intellectually honest and unafraid will assure to them no thrills and no exaltations. Blare of trumpets, rattle of drums, the howling of partisans in political assemblies and of converts in the tents of revivalism are of and for the hosts of hokum. Yet there are satisfactions to be had from the patient acquisition and the honourable defence of natural

knowledge. It is a substantial satisfaction to know that one is neither a worm for a witches' broth nor a sacred bull garlanded for sacrifice. It is a satisfaction to know that if one isn't a congenital idiot he does not have to talk and act like one lest the bogy man get him. And it is pleasant to know that, thanks to natural knowledge, one does not now have to be a cannibal, carnal or spiritual, subsisting on the bodies, or, infinitely worse, on the souls of fellowmen; pleasant above all to know that if one is now and then ingenious and fifty per cent. lucky he may hope to live out his threescore years and ten although intellectually honest and self-respectingly unafraid.